MORSANI COLLEGE OF MEDICINE
Changes to Note

The following curricular changes for the Morsani College of Medicine were approved by the USF Graduate Council on the date noted.

### New Program

<table>
<thead>
<tr>
<th>Program</th>
<th>Degree</th>
<th>Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Athletic Training</td>
<td>M.S.</td>
<td>New Program under existing CIP (51.0913)</td>
<td>9/14/15</td>
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</table>

### Program Changes

<table>
<thead>
<tr>
<th>Program</th>
<th>Degree</th>
<th>Change</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Sciences: Anatomy Conc.</td>
<td>MSMS</td>
<td>Change Curriculum</td>
<td>4/4/16</td>
</tr>
<tr>
<td>Medical Sciences: Athletic Training Conc.</td>
<td>MSMS</td>
<td>Terminate Concentration</td>
<td>4/4/16</td>
</tr>
<tr>
<td>Medical Sciences: IMS Conc.</td>
<td>M.S.</td>
<td>Change curriculum – reduce hours by 1</td>
<td>4/4/16</td>
</tr>
<tr>
<td>Rehabilitation Sciences</td>
<td>Ph.D.</td>
<td>Change Spring Deadline from Nov 15 to Oct 15</td>
<td>3/7/16</td>
</tr>
<tr>
<td>Rehabilitation Sciences: Chronic Disease</td>
<td>Ph.D.</td>
<td>Change Spring Deadline from Nov 15 to Oct 15</td>
<td>3/7/16</td>
</tr>
<tr>
<td>Rehabilitation Sciences: Neuro Disability</td>
<td>Ph.D.</td>
<td>Change Spring Deadline from Nov 15 to Oct 15</td>
<td>3/7/16</td>
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<tr>
<td>Rehabilitation Sciences: Vet. Health/Rein</td>
<td>Ph.D.</td>
<td>Change Spring Deadline from Nov 15 to Oct 15</td>
<td>3/7/16</td>
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### New Graduate Certificates

<table>
<thead>
<tr>
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<th>Date</th>
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</thead>
<tbody>
<tr>
<td>Anatomy</td>
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### Graduate Certificate Changes

<table>
<thead>
<tr>
<th>Certificate</th>
<th>Change</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biomedical Ethics</td>
<td>Change to INACTIVE</td>
<td>5/2/16</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>Change requirements</td>
<td>5/2/16</td>
</tr>
<tr>
<td>Integrative Health Coaching</td>
<td>Change to INACTIVE</td>
<td>5/2/16</td>
</tr>
<tr>
<td>Integrative Oncology</td>
<td>Change to INACTIVE</td>
<td>5/2/16</td>
</tr>
</tbody>
</table>

Added the following USF Health Professional Programs to the USF Graduate Catalog:

- Medicine (M.D.)
- Physical Therapy (D.P.T.)
- Physician Assistant Studies (M.P.A.S.)
University of South Florida
Morsani College of Medicine
12901 Bruce B. Downs Blvd. MDC40
Tampa, FL 33612-4799

Web address: www.health.usf.edu/medicine/graduatestudies
Email: biomed@health.usf.edu
Phone: 813-974-4181
Fax: 813-974-4317

College Dean: Charles J. Lockwood, MD, MHCM
Sr. Associate Dean: Gretchen Koehler, Ph.D.
Associate Dean: Michael Barber, D. Phil
Associate Dean: W. Sandy Quillen, Ph.D.

Accreditation:
The Commission on Colleges of the Southern Association of College and Schools

Mission Statement:
The Morsani College of Medicine Graduate Faculty consist of scientists who conduct research in many fields of science basic to understanding disease processes and to the development of improved methods of diagnosis, treatment and prevention of disease. Students receive their research training in up-to-date methods of scientific investigation and gain experience in modern well-equipped laboratories. The faculty is dedicated to providing high quality education in an environment conducive to scholarly activity and scientific achievement.

Candidates for the Ph.D. in Medical Science enter into an interdisciplinary program enabling them to major in any one of the six concentrations that are offered. Collaboration among laboratory scientists of all disciplines is encouraged. The programs of study allow students to tailor their programs to individual needs and interests. Thanks to faculty research awards, students have a multitude of opportunities to participate in cutting-edge research projects. Medical Science Ph.D. graduates go on to become deeply involved in research sponsored by academic, industrial and government institutions.

The master’s degree in Medical Sciences (M.S.M.S.) can be completed in as little as one year and has been designed to assist students who are seeking admissions into doctoral programs (Ph.D. or M.D.). Successful graduates of the Medical Science master’s program can improve their chances for admissions into professional programs by further developing their foundational knowledge of biomedical science. Currently, the Medical Sciences master’s degree program boasts a ninety percent success rate for adequately preparing students for entry into doctoral or professional programs.

Financial Aid - A limited number of assistantships, fellowships, and tuition waivers are available for doctoral students.

Major Research Areas:
Allergy, Immunology and Infectious Diseases Cancer Biology, Cardiovascular Research, Neuroscience Research

Degrees, Programs, Concentrations:

Master of Science (M.S.)
   Advanced Athletic Training (AAT)
   Athletic Training (ATR)

Master of Physician Assistant Studies (M.P.A.S.)
Physician Assistant Studies (MPA)
Master of Science in Bioinformatics and Computational Biology (M.S.B.C.B.)
Bioinformatics and Computational Biology (BCB)

Master of Science in Biotechnology (M.S.B.)
Biotechnology (MSB)

Master of Science in Health Informatics (M.S.H.I.)
Health Informatics (HIF)

Master of Science in Medical Sciences (M.S.M.S.)
Medical Sciences (MSG)
  Aging and Neuroscience (ANS)
  Athletic Training (ATL)
  Anatomy (ANA)
  Biochemistry and Molecular Biology (BMB)
  Clinical and Translational Research (CTR)
  Health Informatics (HIN)
  Health Science (HSC)
  Interdisciplinary Medical Sciences (IMS)
  Medical Microbiology and Immunology (MDI)
  Metabolic and Nutritional Medicine (MNM)
  Molecular Medicine (MLM)
  Women’s Health (WSH)

Doctor of Philosophy (Ph.D.)
Medical Sciences (MSG)
  Allergy, Immunology and Infectious Disease (AII)
  Anatomy (ANA)
  Biochemistry and Molecular Biology (BMB)
  Clinical and Translational Research (CTR)
  Microbiology and Immunology (MMI)
  Molecular Medicine (MLM)
  Molecular Pharmacology and Physiology (MPY)
  Neuroscience (NEU)
  Pathology and Cell Biology (PCB)
  Pathology and Laboratory Medicine (PLM)
  Pharmacology and Therapeutics (PAT)
  Physiology and Biophysics (PAB)
  Rehabilitation Sciences (RHS)
  Chronic Disease (CHD)
  Neuromusculoskeletal Disability (NMD)
  Veteran’s Health/Reintegration (VHR)

Doctor of Medicine (M.D.)*
Medicine

Doctor of Physical Therapy (D.P.T.)*
Physical Therapy

*professional programs, offered through the Morsani College of Medicine – USF Medical School
Dual Programs:
Biomedical Engineering (Ph.D.) and Medicine (M.D.) Dual Degree*
Biotechnology (MS) and Entrepreneurship in Applied Technologies (M.A.)
Medical Sciences (Ph.D.)/Medicine (M.D.) Combined Program
Physical Therapy (D.P.T.) and Public Health (M.P.H.)
*refer to the USF Medical School or the College of Engineering for information.

Graduate Certificates:
Aging and Neuroscience
Anatomy
Biochemistry & Molecular Biology
Bioinformatics
Biotechnology
Brain Fitness and Memory Management
Cardiovascular Engineering
Clinical Investigation
Health Informatics
Health Sciences
Integrative Health Coaching
Integrative Oncology
Integrative Weight Management
Medical Biochemistry, Microbiology and Immunology
Medicine and Gender
Metabolic Cardiology
Metabolic Endocrinology
Metabolic and Nutritional Medicine
Molecular Medicine
Pharmacy Sciences
Scholarly Excellence, Leadership Experiences and Collaborative Training

For the most up to date listing, see:
http://www.usf.edu/innovative-education/programs/graduate-certificates/

COLLEGE REQUIREMENTS
Refer to College for information.
About the Catalog

The University of South Florida Graduate Catalog is organized with the degree programs offered listed in the section of the College that offers them. For example, the Master of Science degree with a “program” (also known as major) in Biology is listed in the College of Arts and Sciences section. Some colleges offer areas of specialization, or “concentrations” within a degree program.

PROGRAMS

MEDICAL SCIENCES PROGRAM

Doctor of Philosophy (Ph.D.) Degree

CONCENTRATIONS

Concentration Requirements are listed separately under each Program.

The Program and Concentration are listed on the official transcript. Other areas, such as application tracks, are not listed on the transcript.

Example:
Doctor of Philosophy in Medical Sciences
with a Concentration in Anatomy.
ADVANCED ATHLETIC TRAINING PROGRAM

Master of Science (M.S.) Degree

DEGREE INFORMATION

Program Admission Deadlines:

<table>
<thead>
<tr>
<th></th>
<th>Domestic Students:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>July 1</td>
</tr>
<tr>
<td>Spring</td>
<td>No Admission</td>
</tr>
<tr>
<td>Summer</td>
<td>No Admission</td>
</tr>
</tbody>
</table>

International Students living outside the U.S. Deadline for immigration documents, etc.:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>July 1</td>
</tr>
<tr>
<td>Spring</td>
<td>No Admission</td>
</tr>
<tr>
<td>Summer</td>
<td>No Admission</td>
</tr>
</tbody>
</table>

Minimum Total Hours: 33

Program Level: Master’s

CIP Code: 51.0913

Dept Code: OSM

Program (Major/College): AAT/MD

Approved 201508

CONTACT INFORMATION

College: Medicine
Department: Orthopedics and Sports Medicine

Contact Information: [www.grad.usf.edu](http://www.grad.usf.edu)

USF Athletic Training Admissions Office – Professional Program
Attn: Angela Moore
13220 USF Laurel Drive, MDF 5th Floor, MDC106, Tampa, FL 33612

PROGRAM INFORMATION

The Master of Science in Advanced Athletic Training has an emphasis on youth sports injury and other advanced athletic training competencies. This post-professional program is directed towards students who either hold the athletic training credential issued by the Board of Certification (BOC) or who are BOC-eligible or have equivalent athletic training professional preparation and wish to seek an advanced degree. This program is designed to provide students with a post-professional degree in Advanced Athletic Training with an emphasis on youth sports injury. For information on tuition costs, please contact the Program.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools

Major Research Areas:
Athletic training, youth sports injury

ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below

Program Admission Requirements
- A bachelor’s degree from a regionally accredited university
- Board of Certification (BOC)-certified or equivalent (i.e. certified athletic trainer, recent graduate from CAATE-accredited Athletic Training Program, Canadian Athletic Therapist certification)
- Minimum overall grade-point average of 3.0 out of a possible 4.0 with a minimum grade-point average of 3.0 in Athletic Training courses
- Completion of GRE on record
DEGREE PROGRAM REQUIREMENTS

Total Minimum Hours: 33 credit hours

Core Requirements
ATR 6236  3  Pediatric Sports Medicine
ATR 6235  3  Motor Development & Skill Acquisition
ATR 5605  3  Youth Injury Epidemiology
ATR 5515  3  Administrative Aspects of Injury Prevention Programs
ATR 6615  3  Evidence Based Medicine, Research & Writing
ATR 5508  3  Contemporary Issues in Athletic Training (Includes 5 days on campus in Tampa)
ATR 6116  3  Preventing Sudden Death in Youth Sports Settings
ATR 5319  3  Rehabilitation Considerations for Children
ATR 6617  3  Capstone Project I
ATR 6446  3  Medical Conditions of Adolescents
ATR 6618  3  Capstone Project II

Non-Thesis
No thesis is required.

Comprehensive Exam: Capstone requirement
The degree will be a non-thesis option, but will require a capstone project for each student, that will be completed during his or her Year 2 (ATR 6617 & ATR 6618). The capstone project will be in lieu of a comprehensive examination. The project could consist of items such as a comprehensive literature review, development of an injury prevention program, systematic review, development of a policies and procedures manual, etc.

Other Requirements
The program is designed to be completed in two years. The format of the program includes 10 courses, which are taught completely online, and one hybrid course that includes an online component and an on-campus (Tampa, FL) 5-day session in the summer.

COURSES
See http://www.ugs.usf.edu/course-inventory/
ATHLETIC TRAINING PROGRAM

Master of Science (M.S.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
Domestic Students:
- Fall: No Admission
- Spring: No Admission
- Summer: February 15

International Students living outside the U.S.:
Deadline for immigration documents, etc.:
- Fall: No Admission
- Spring: No Admission
- Summer: October 1

Minimum Total Hours: 60
Program Level: Master's
CIP Code: 51.0913
Dept Code: OSM
Program (Major/College): ATR/MD
Concentrations: None

CONTACT INFORMATION

College: Medicine
Department: Orthopedics and Sports Medicine
Contact Information: www.grad.usf.edu

USF Athletic Training Admissions Office – Professional Program
Attn: Angela Moore
13220 USF Laurel Drive, MDF 5th Floor, MDC106, Tampa, FL 33612

PROGRAM INFORMATION

The Master of Science in Athletic Training (M.S. in A.T.) program is built around 60 credit hours of required coursework to satisfy the eligibility requirements for the students to sit for the National Athletic Trainers' Association Board of Certification examination.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools

Major Research Areas:
Athletic Training, Rehabilitation, Biomechanics, Prevention of Sudden Death in Athletics

ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below

Program Admission Requirements
- A bachelor's degree from a regionally accredited university
- Minimum of 3.00 GPA or equivalent in undergraduate coursework
- Completion of GRE on record
- Meet the technical standards for admission or show potential for accomplished tasks
- Three (3) letters of Recommendation
- Personal statement in 1000 words or less describe primary career goals, what has most directly influenced your choice to become an Athletic Trainer, your attributes related to the field of Athletic Training and why you should be selected in the Athletic Training program.
- Interview (on campus preferred) with the Athletic Training faculty and staff
Prerequisite Courses

- Anatomy and Physiology (2 semesters)
- Medical Terminology
- Biomechanics/Kinesiology (Recommended)
- Nutrition
- Psychology
- Exercise Physiology
- Chemistry
- Physics
- Biology
- Statistics
- Biomechanics/Kinesiology (Recommended)
- Technical Writing (recommended)

DEGREE PROGRAM REQUIREMENTS

Total Minimum Hours: 60 credit hours

Core Requirements

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ATR 5102C</td>
<td>Athletic Training Techniques</td>
<td>3</td>
</tr>
<tr>
<td>ATR 5125</td>
<td>Anatomical Basis of Clinical Practice in Sports Medicine</td>
<td>3</td>
</tr>
<tr>
<td>ATR 5217C</td>
<td>Physical Examination I</td>
<td>4</td>
</tr>
<tr>
<td>ATR 5218C</td>
<td>Physical Examination II</td>
<td>4</td>
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<tr>
<td>ATR 5252C</td>
<td>Health and Wellness Promotion across the Lifespan III</td>
<td>1</td>
</tr>
<tr>
<td>ATR 5340C</td>
<td>Therapeutic Interventions I</td>
<td>4</td>
</tr>
<tr>
<td>ATR 5341C</td>
<td>Therapeutic Interventions II</td>
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</tr>
<tr>
<td>ATR 5342C</td>
<td>Therapeutic Interventions III</td>
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<tr>
<td>ATR 5350C</td>
<td>Health and Wellness Promotion across the Lifespan I</td>
<td>3</td>
</tr>
<tr>
<td>ATR 5351C</td>
<td>Health and Wellness Promotion across the Lifespan II</td>
<td>1</td>
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<tr>
<td>ATR 5432</td>
<td>Medical Conditions</td>
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<tr>
<td>ATR 5534</td>
<td>Documentation in Athletic Training</td>
<td>1</td>
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<tr>
<td>ATR 5610</td>
<td>Evidence Based Medicine in Athletic Training</td>
<td>2</td>
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<tr>
<td>ATR 5812</td>
<td>Clinical Experience in Athletic Training I</td>
<td>3</td>
</tr>
<tr>
<td>ATR 5822</td>
<td>Clinical Experience in Athletic Training II</td>
<td>3</td>
</tr>
<tr>
<td>ATR 6104</td>
<td>Preventing Sudden Death in Sport I</td>
<td>2</td>
</tr>
<tr>
<td>ATR 6105</td>
<td>Preventing Sudden Death in Sport II</td>
<td>2</td>
</tr>
<tr>
<td>ATR 6233</td>
<td>Advanced Athletic Training</td>
<td>3</td>
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<tr>
<td>ATR 6517</td>
<td>Professional Practice</td>
<td>4</td>
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<tr>
<td>ATR 6610</td>
<td>Research in Athletic Training</td>
<td>3</td>
</tr>
<tr>
<td>ATR 6832</td>
<td>Clinical Experience in Athletic Training III</td>
<td>3</td>
</tr>
<tr>
<td>ATR 6842</td>
<td>Clinical Experience IV</td>
<td>3</td>
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</tbody>
</table>

*Students are required to complete between 200-300 clinical hours per semester at various assigned clinical sites around the Tampa area. In accordance to accreditation standards, these clinical experiences must be tied directly to academic credit.

**Many students will take advantage of the summer between the 1st and 2nd years to obtain clinical internships in both local and out of town entities.

Non-Thesis
No thesis is required.

Comprehensive Exam: Capstone requirement
The degree will be a non-thesis option, but will require a capstone project for each student, that will be completed in his or her last semester during the Research in Athletic Training course. The capstone project will be in lieu of a comprehensive examination. The project could consist of items such as a comprehensive literature review, development of an injury
prevention program, systematic review, development of a policies and procedures manual, etc. The Athletic Training faculty will approve the contents of individual projects during the Research in Athletic Training course (ATR 6610).

**Other Information:**
Graduation Requirements - Students will complete all 60 hours of didactic coursework with a minimum GPA of 3.00. Students will complete at least 1000 hours of clinical education under an approved Preceptor.

**Sequence:**

**Year 1**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Summer</td>
<td>AT Techniques</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Anat Basis of Clin Prac</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Documentation in AT</td>
<td>1</td>
</tr>
<tr>
<td>Fall</td>
<td>Physical Exam I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Therapeutic Inter I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Evidence Based Med</td>
<td>2</td>
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<tr>
<td></td>
<td>Health and Wellness I</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Clinical Exp 1</td>
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</table>

**Spring**

<table>
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<th>Credits</th>
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<tr>
<td>Medical Conditions</td>
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<td>Therapeutic Inter II</td>
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<tr>
<td>Health and Wellness II</td>
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<td>Physical Exam II</td>
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<tr>
<td>Prev Sudden Death I</td>
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<tr>
<td>Clinical Exp II</td>
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**Year 2**

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Summer</td>
<td>Open time for clinical internships</td>
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</tr>
<tr>
<td>Fall</td>
<td>Health and Wellness III</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Prev Sudden Death II</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Professional Practice</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Therapeutic Inter III</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Clinical Exp III</td>
<td>3</td>
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</tbody>
</table>

**Spring**

<table>
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<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced AT</td>
<td>3</td>
</tr>
<tr>
<td>Research in AT</td>
<td>3</td>
</tr>
<tr>
<td>Clinical Exp IV</td>
<td>3</td>
</tr>
</tbody>
</table>

**COURSES**
See [http://www.ugs.usf.edu/course-inventory/](http://www.ugs.usf.edu/course-inventory/)
BIOINFORMATICS AND COMPUTATIONAL BIOLOGY PROGRAM

Master of Bioinformatics and Computational Biology (M.S.B.C.B.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
Fall:
  Domestic:       June 1
  International (outside US): May 1
  International (inside US): June 1

Spring:
  Domestic:       October 15
  International (outside US): September 15
  International (inside US): October 15

Summer:
  Domestic:       March 1
  International (outside US): January 15
  International (inside US): February 15

Minimum Total Hours: 36
Program Level: Masters
CIP Code: 26.1103
Dept Code: MED
Program (Major/College): BCB MD
Approved: 2003

CONTACT INFORMATION

College: Medicine
Department: Molecular Medicine
Contact Information: www.grad.usf.edu
Other Resources: http://gradaffairs.health.usf.edu/Bioinformatics.html

PROGRAM INFORMATION

The Master's Program in Bioinformatics and Computational Biology at the University of South Florida represents a multi-college partnership and a truly interdisciplinary collaboration. Participating departments include the Departments of Biochemistry & Molecular Biology in the Morsani College of Medicine, Mathematics in the College of Arts and Sciences, Computer Sciences and Engineering and the Division of Biomedical Engineering in the College of Engineering, Epidemiology and Biostatistics in the College of Public Health and Information Systems and Decision Sciences in the College of Business Administration. The program is designed to meet the increasing demand for trained people in this emerging area, which crosses the traditional fields of biological, mathematical and computer sciences. The program, therefore, builds on and complements the current strengths of the university.

The goal of the Master’s Program in Bioinformatics and Computational Biology is to provide students enrolled in the program with high quality training and education that will prepare them for careers in science, industry, health care and education. The curriculum has been designed accordingly and provides the theoretical background, the practical training and, with the internships, the "real life" experience, which will equip students with the essential tools for a successful career in the field of Bioinformatics and Computational Biology.

The Master's Program in Bioinformatics & Computational Biology is designed for 36 credit hours to be obtained during one to two years of study. Core courses will provide the foundation and basics before advanced work, including electives, and a Master's thesis or internship will be pursued. The curriculum is flexible and will be tailored to the individual student's background, interests and career goals. However, electives must be selected from at least two of the participating departments to assure breadth of training.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools.

http://health.usf.edu/medicine/
ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

Program Admission Requirements
- A bachelor’s degree or equivalent from a regionally accredited university
- Minimum overall grade-point average of 3.00 out of a possible 4.00 with a minimum grade-point average of 3.00 in the sciences
- Graduate Record Examination*
- Completed pre-requisites in:
  - Calculus I-III
  - Linear algebra
  - Biostatistics
  - At least "C" and "Maple" or "Mathematica" or "MATH-CAD"
  - General biology (1 year)
  - Organic chemistry (1 year)

*The GRE may be waived in special circumstances where the applicant can demonstrate substantial bioinformatics experience. This experience includes (but is not limited to) 2-3 years of research experience in academic or industrial settings working on bioinformatics analysis of biological data, or software development (preferentially in biological or bioinformatics fields), or participation in research projects leading to published papers. The decision on the waiving of GRE will be at the Program Director’s discretion.

DEGREE PROGRAM REQUIREMENTS

Total Minimum Program Hours: 36

Core Requirements – 28
Electives – 8

Prerequisites:
Calculus I-III, linear algebra, biostatistics, at least "C" and "Maple" or "Mathematica" or "MATH-CAD", one year of general biology and one year of organic chemistry.

CORE REQUIREMENTS

Required courses: 28

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GMS 7930</td>
<td>Principles of Molecular Medicine Sec I &amp; II</td>
<td>4</td>
</tr>
<tr>
<td>GMS 7930</td>
<td>Python Programming</td>
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<tr>
<td>BCH 6886</td>
<td>Fundamentals of Structural Bioinformatics</td>
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<tr>
<td>GMS 7930</td>
<td>Applied Bioinformatics</td>
<td>3</td>
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<tr>
<td>BSC 6932</td>
<td>Computational Biology</td>
<td>3</td>
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<tr>
<td>GMS 6901</td>
<td>Research Ethics</td>
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<tr>
<td>PHC 6050</td>
<td>Biostatistics I</td>
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<tr>
<td>BSC 6942</td>
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<tr>
<td>MAT 4930</td>
<td>Combinatorics/Graph Theory</td>
<td>3</td>
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</tbody>
</table>

Students who can demonstrate significant prior training in any required course can, at any time during their studies, with written approval of the Graduate Program Director, replace the course with a program elective course.

ELECTIVES
8
Students select from the lists below, or other course as approved by Graduate Program Director.
SEQUENCE
Required Courses:

FALL
- GMS 7930 Basic Principles of Molecular Medicine Sec I & II 4cr
- MAT 4930/5932 Combinatorics/Graph Theory 3 cr
- GMS 6091 Research Ethics 1cr

SPRING
- BCH 6886 Fundamentals of Structural Bioinformatics 4 cr
- PHC 6050 Biostatistics I 3cr
- BSC 6932 Computational Biology 3 cr

SUMMER
- GMS 7930 Applied Bioinformatics 3 cr
- GMS 7930 Python Programming 3 cr
- BCH 6952 Bioinformatics Internship (all semesters) 4 cr – 6 cr

Electives
Science/COM:
- BCH 6135 Methods In Molecular Biology 4
- GMS 6114 Vaccines and Applied Immunology 2
- GMS 6194 Biotechnology Forum—R&D in Florida’s Biotech Companies 1
- GMS 6933 Case Studies: Intellectual Property in Biotechnology 2
- GMS 6141 Basic Medical Microbiology/Immunology 3
- CIS 6930 Advanced Data Structures 3
- MAT 6932 Sel. Topics in Bioinformatics & Comp. Biology 3
- GMS 7930 Selected Topics 3
- GMS 7939 Graduate Seminar 1
- GMS 6847 Translational Biotechnology 3
- GMS 7910 Directed Research 1-4
- GMS 6101 Molecular and Cellular Immunology 3
- BHC 6746 Structural Biology 3
- BCH 6227 Molecular Basis of Disease 4
- GMS 6103 Found-Med Microbiology and Immunology 4
- GMS 6107 Advances in Virology 2

Management Information Systems/COBA:
- ISM 6124 Advanced Systems Analysis and Design 3
- ISM 6218 Advanced Database Management 3
- ISM 6225 Distributed Information Systems 3
- ISM 6930 Data Warehousing and Data Mining 3
- ISM 6930 Information Technology in Medical Care 3

Computer Science and Engineering/Biomedical Engineering/CE:
- COT 6405 Introduction to the Theory of Algorithms 3
- CEN 6016 Software Engineering 3
- CAP 5625 Introduction to Artificial Intelligence 3
- CAP 6638 Pattern Recognition 3
- CAP 5400 Digital Image Processing 3
- ESB/CIS 6930 Bioinformatics in Biomedical Engineering 3

Mathematics/CAS:
- STA 5326 Mathematical Statistics 3
- MAD 5305 Graph Theory 3
USF Graduate Catalog 2016-2017

Bioinformatics and Computational Biology (M.S.B.C.B.)

MAD 4504 Theory of Computation 3
STA 5166 Computational Statistics 3
MAT 6939 Graduate Seminar 2

Epidemiology & Biostatistics/CPH:
PHC 6051 Biostatistics II 3
PHC 6053 Categorical Data Analysis 3
PHC 6054 Design of Experimental Studies for Health Researchers 3
PHC 6057 Biostatistical Inference I 3

Comprehensive Exam
As an alternative to a Master’s Comprehensive Exam, Bioinformatics Master’s students will have to complete a practical internship and theoretical assignment, which will both require the successful application of the knowledge they have acquired during their formal training. Required are:

- An internship with a written and an oral internship report and
- A review paper providing an overview of recent advancements in an area of bioinformatics of the student’s choice.

Thesis
Complete M.S. Thesis Project or Internship 4-6

Students must maintain an overall average of 3.00 (“B”).

COURSES
See http://ugs.usf.edu/course-inventory
BIOTECHNOLOGY PROGRAM

Master of Science in Biotechnology (M.S.B.) Degree

DEGREE INFORMATION

Program Admission Deadlines:

<table>
<thead>
<tr>
<th></th>
<th>Fall</th>
<th>Spring</th>
<th>Summer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic</td>
<td>June 1</td>
<td>October 15</td>
<td>March 1</td>
</tr>
<tr>
<td>International (outside US)</td>
<td>March 1</td>
<td>September 15</td>
<td>January 15</td>
</tr>
<tr>
<td>International (inside US)</td>
<td>June 1</td>
<td>October 15</td>
<td>February 15</td>
</tr>
</tbody>
</table>

In select cases, late admission is possible.

Minimum Total Hours: 36

Program Level: Masters

CIP Code: 26.1201

Dept Code: MED

Program (Major/College): MSB MD

Approved: 2007

CONTACT INFORMATION

College: Medicine

Department: Molecular Medicine

Contact Information: [www.grad.usf.edu](http://www.grad.usf.edu)

biotech@health.usf.edu

Other Resources:

Website: [http://gradaffairs.health.usf.edu/biotechnology.html](http://gradaffairs.health.usf.edu/biotechnology.html)

PROGRAM INFORMATION

The USF Master’s Program in Biotechnology represents a multi-college partnership and a truly interdisciplinary collaboration. Participating colleges include the Morsani College of Medicine, the College Of Engineering, the College Of Public Health, the College of Arts And Sciences and the College of Business Administration. The program is designed to meet the increasing demand for trained people in this exploding area, which crosses the traditional fields of biological, chemical, engineering, health and computer sciences. The curriculum has been designed accordingly and provides the theoretical background, the practical training and, with the internships, the “real life” experience, which will equip students with the essential tools for a successful career in the field of biotechnology. In 2008, the USF Biotechnology Master’s Program was recognized by the Council of Graduate Schools as Professional Science Master’s Program. Program graduates take jobs in the Biotechnology Industry or move on to a PhD Program, Medical School, Dental School, Veterinary School or Pharmacy School.

Accreditation:

Accredited by the Commission on Colleges of the Southern Association of College and Schools.
ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

Program Admission Requirements
The USF Biotechnology Master’s Program will be available for full-time and part-time enrollment. In order to be considered for admission to the Master’s Program in Biotechnology, applicants must fulfill the following requirements:

Administrative Pre-Requirements:
- A bachelor’s degree
- A minimum undergraduate GPA of 3.00 on a 4.00 scale
- A GRE test score
- Two letters of recommendation
- Statement of purpose, indicating how the program would suit the student's interests and serve his/her professional goals
- Complete transcripts of undergraduate work and any previous graduate work
- International students need an official transcript evaluation, see Office of Admissions
- A completed USF Application to Graduate Studies

Program Pre Requirements:
A good foundation in biochemistry, molecular biology and genetics, i.e. a bachelor’s degree in either the biological or chemical sciences or at least one year of studies in those disciplines would be the optimal preparation for admission to the USF Master’s Program in Biotechnology. However, the faculty of the USF Biotechnology Program is aware that not all applicants who are interested in pursuing this degree will have this formal background. Instead, some might have accumulated substantial knowledge in one of these disciplines during their work as laboratory technicians, engineering assistants or environmental or public health service providers. Those students would be ideally suited to start their graduate education with a Graduate Certificate in Biotechnology that is also offered by the Department of Molecular Medicine in the Morsani College of Medicine. http://www.usf.edu/innovative-education/programs/graduate-certificates/biotechnology.aspx

The Biotechnology Graduate Certificate Degree has less stringent entrance requirements a GRE is not required) but its successful completion will serve several purposes:
- it will provide the students with a certificate of advanced studies independent of prospective additional studies in the Biotechnology Master’s Program,
- it will serve as a complete package of fulfilled pre requirements for admission into the Biotechnology Master’s Program,
- 12 credit hours of the Biotechnology Certificate Program can be transferred into the Master's Program.

DEGREE PROGRAM REQUIREMENTS

Total Minimum Program Hours 36 credit hours

The Master’s Program in Biotechnology is designed for 36 credit hours, which can be obtained in 3 semesters of study. The program will be available for full-time and part-time enrollment. Seven core courses will provide the foundation and basics before advanced work, including four electives and an internship, will be pursued. The curriculum is flexible and can be tailored to the individual student’s background, interests and career goals.

The core courses include introductory courses in biochemistry, molecular and cellular biology, introduction to biotechnology, bioinformatics, biotechnology and bioethics, Translational Biotechnology and a seminar on current topics in biotechnology. Most of these courses are part of the current graduate curricula in the involved colleges. Student will have the option to choose four electives out of a total of 22 electives that are contributed by five participating colleges. The electives are organized in four different categories i.e. science, engineering, public health and business/law and the students will be free to select according to their interests and career plans.

Students must maintain an overall average of 3.00 ("B")
CORE REQUIREMENTS

Required Courses: 31 hours

GMS 7930 Basic Principles in Molecular Medicine Sec I & II 4cr
BCH 6135C Methods in Molecular Biology 4cr
BSC 6436 Intro to Biotechnology 3cr
EIN 6106 Technology and Law 3cr
GMS 6847 Translational Biotechnology 3cr
BSC 6437 Biotechnology and Bioethics 3cr
BCH 6886 Fundamentals of Structural Bioinformatics 4cr
GMS 7930 Biotech Forum 1cr
GMS 6943 Biotechnology Internship 3cr
GMS 7930 Python Programing 3cr

Students who can demonstrate significant prior training in any required course, can at anytime during their studies, with written program approval, replace a course with an elective.

Electives: 5 hours

Students select from the lists below, or other course as approved by Graduate Program Director.

SEQUENCE

Required Courses:

Fall Semester 14 hours

GMS 7930 Basic Principles in Molecular Medicine Set I & II 4
BSC 6436 Introduction to Biotechnology 3
BCH 6135C Methods in Molecular Biology 4
EIN 6106 Technology and Law 3

Spring Semester 11 hours

GMS 7930 Biotech Forum 1
GMS 6847 Translational Biotechnology 3
BSC 6437 Biotechnology and Bioethics 3
BCH 6886 Fundamentals of Structural Bioinformatics 4

SUMMER 6 hours

GMS 7930 Python Programming 3
GMS 6943 Biotechnology Internship (all semesters) 3

Electives

Science:

GMS 7930 Stem Cells in Brain Repair 3
GMS 6513 Principles of Pharmacology and Therapeutics 3
GMS 7930 Aging and Neuroscience 3
GMS 6114 Vaccines and Applied Immunology 2
GMS 7939 Graduate Seminar 1
GMS 6141 Basic Medical Microbiology/Immunology 3
GMS 6115 Medical Parasitology and Mycology 3
GMS 6110 Microbial Pathogenesis and Host parasite interactions 3
BCH 6746 Structural Biology 3
GMS 6103 Foundations in Med Microbiology & Immunology 4
GMS 7930 Applied Bioinformatics 3
BCH 6627 Molecular Basis of Disease 4
GMS 6101 Molecular Cellular Immunology 3
GMS 6012 Basic Medical Genetics 3

http://health.usf.edu/medicine/
GMS 6107  Advances in Virology  2
GMS 7930  FDA Regulations  2
GMS 7910  Directed Research  1-4

Engineering:
BME 6107  Biomaterials I: Material Properties  3
BME 6108  Biomaterials II: Biocompatibility  3
BME 6634  Biotransport Phenomena  3
ECH 6417  Bioseparations  3
ECH 5740  Theory and Design of Bioprocesses  3
BME 5040  Pharmaceutical Engineering  2
ENV 6667  Environmental Biotechnology  3

Public Health:
PHC 6310  Environmental Occupational Toxicology  3
PHC 6050  Biostatistics I  3
PCH 6051  Biostatistics II  3
PHC 6000  Epidemiology  3
PHC 6017  Design and Conduct of Clinical Trials  3

Business/Law:
EIN 6186  Strategic Market Assessment for New Technologies  3
ENT 6016  New Venture Formation  3
ENT 6116  Business Plan Development  3
ENT 6415  Fundamentals of Venture Capital and Private Equity in Entrepreneurship  3
GMS 6095  Principles of Intellectual Property  3
GMS 6933  Case Studies: Intellectual Property in Biotechnology  2

Project or Thesis/Dissertation:
As an alternative to a Master’s Comprehensive Exam, biotechnology Master’s students will have to complete a practical internship and theoretical assignment which will both require the successful application of the knowledge they have acquired during their formal training. Required are:

- an internship with a written and an oral internship report and
- a review paper providing an overview of recent advancements in an area of biotechnology of the student’s choice.

COURSES
For more information on individual courses, please see http://ugs.usf.edu/course-inventory or contact the program directly: biotech@health.usf.edu
BIOTECHNOLOGY AND ENTREPRENEURSHIP IN APPLIED TECHNOLOGIES
DUAL DEGREE PROGRAM

Master of Science in Biotechnology (M.S.B.) Degree and Master of Science in Entrepreneurship in Applied Technologies (M.S.)

DEGREE INFORMATION

Program Admission Deadlines:
Fall:
- Domestic: June 1
- International in country: January 2

Spring:
- Domestic: October 1
- International in-country: February 1
- International out of country: June 1

Minimum Total Hours: 57
Program Level: Masters
CIP Code: 26.1201
Dept Code: MED
Program (Major/College): MSB MD

CONTACT INFORMATION

Colleges: Business and Medicine
Department: Center for Entrepreneurship and Molecular Medicine
Contact Information: www.grad.usf.edu

PROGRAM INFORMATION

The Dual Degree Program in Biotechnology and Entrepreneurship is the combination of two existing programs that allows students to obtain two Master’s degrees in a concurrent rather than sequential effort. The time commitment will be about three years with a total of 57 credit hours. The combination of a Master’s in Biotechnology with a Master’s in Entrepreneurship educates students to understand the scientific process and its challenges and at the same time provides the training that will enable them to facilitate the translation of scientific data from mind to market. This combination makes graduate students outstandingly versatile and thereby lays an essential step-stone for their future success.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools. The Biotechnology Program has also been recognized as a “Professional Science Master’s Program” by the U.S. Council of Graduate Schools.

ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

Program Admission Requirements
Students will have to apply individually to each program. Admission to one program does not automatically grant admission to the other program. Once the student has been admitted to both programs, he/she seeks permission from the program directors of both programs for dual crediting of 9 credit hours; the USF Office of Graduate Studies provides a form sheet for this process. For admission students must have:

- A bachelor’s degree with a minimum undergraduate GPA of 3.0 on a 4.0 scale
- A minimum GRE test score of at least 500 verbal and at least 600 quantitative, can be waived in some cases
DEGREE PROGRAM REQUIREMENTS

A total of 57 credits is required for graduation with a Dual Master’s in Biotechnology and Entrepreneurship. Beyond the dual crediting of 9 credit hours, all graduation requirements of the individual programs apply.

Course Requirements:

- GMS 6200 Biochemistry and Molecular and Cellular Biology 5
- BSC 6436 Intro to Biotechnology 3
- BCH 6888 Bioinformatics 3
- GMS 6095 Principles of Intellectual Property 3
- GMS 6847 Translational Biotechnology 3
- BCH 6070 Biotechnology and Bioethics 3
- Elective from Biotechnology Program 3
- GMS 7939 Graduate Seminar 1
- EIN 6106 Technology and Law 3
- GEB 6115 New Venture Formation 3
- GEB 6930 Fund of Venture Cap Priv Equity 3
- EIN 6930 New Product Development 3
- GMS 6943 Biotechnology Internship (140 contact hrs minimum) 3
- GEB 6930 Strategies in Entrepreneurship 3
- EIN 6430 Overview of Regulated Industries 3
- GEB 6930 Strategies in Market Assessment 3
- GEB 645 Social, Ethical, Legal Systems 3
- GEB 6116 Business Plan Development 3
- GEB 6930 Adv Topics in Entrepreneurship/Internship 3
- GEM 7930 Biomedical Ethics 3
- GMS 6141 Basic Medical Microbiology/Immunology 3
- GMS 6115 Medical Parasitology and Mycology 3
- GMS 6110 Microbial Pathogenesis and Host Parasite Interaction 3

COURSES

See http://ugs.usf.edu/course-inventory

For more information on individual courses, please see http://ugs.usf.edu/course-inventory or contact the program directly: biotech@health.usf.edu
HEALTH INFORMATICS

Master of Science in Health Informatics (M.S.H.I.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
- Fall: February 15
- Spring: October 15
- Summer: February 15

Minimum Total Hours: 32
Program Level: Masters
CIP Code: 51.2706
Dept Code: MED
Program (Major/College): HIF/MD
Approved: 2013

CONTACT INFORMATION

College: Medicine
Contact Information: www.grad.usf.edu

PROGRAM INFORMATION

The Master of Science in Health Informatics degree offers a curriculum which integrates the domains of information science, information resources management and health care organization and management.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools.

ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

Program Admission Requirements
- $65 non-refundable application fee
  The breakdown of this fee is as follows:
  - $30.00 USF’s Application Fee
  - $35.00 Transcript Procurement Fee

- A bachelor’s degree from a regionally accredited university in the biological, chemical, computer or management information sciences or other appropriate field, or the equivalent bachelors and/or graduate degrees from a foreign institution.
- Minimum overall grade-point average of 3.00 out of a possible 4.00 with a minimum grade point average of 3.00 in the sciences
- Transcripts from all colleges and universities attended
- Resume
- Two Letters of Recommendation
- While these are not required, GRE, MCAT or VAT standardized test scores or evidence of substantial health informatics experience can be submitted to enhance an application.
- An example is if a student has a GPA below 3.0 and wishes to prove he will be a positive addition to the school.

Note: F-1 student visa regulations allow students to enroll in only one 3-credit hour online/distance learning course per the official full-time equivalent for the degree level of study. Therefore, the F-1 visa is not appropriate for any degree program that is offered completing via distance learning or online courses. International students may pursue an online program from outside the US, in which case an I-20 is not required.
Applicants who do not require a visa who are from countries where English is not the official language must demonstrate proficiency in English* in one of the following ways

- By providing scores of 79 or higher on the Test of English as a Foreign Language (TOEFL iBT)
- By providing a score of 6.5 or higher on the International English Language Testing System (IELTS)
- By earning a score of 500 (or equivalent) on the GRE Verbal Exam
- By earning a baccalaureate or higher degree at a regionally accredited institution in the U.S.
- By earning a degree at a foreign institution where English is the language of instruction (must be documented on the transcript)

Proof of Residency
a. Applicants who are not U.S. citizens, but are residing in the U.S., must provide a copy of a U.S. Visa or permanent resident card.
   i. The following VISA types are not eligible to take classes in these programs:
      - F-1
      - F-2
      - B-1/B-2
      - C (transit visa only)
      - D
      - J-1 student
      - M-1
      - M-2
      - The other categories could be admitted - subject to review of ability to engage in study while in the US.
   ii. USF cannot issue an I-20 for a student visa to pursue this degree program. International applicants who do not require a visa and whose current visa status allows study can apply as well as students who intend to take the entire degree from outside the US. Please note the visa waiver program and the B1/B2 visa do not allow study in this type of program.

b. Applicants who were born outside of the U.S. but are now U.S. citizens are required to submit proof of citizenship (naturalization paperwork or a copy of a passport).

All foreign transcripts that are not in English must be accompanied by a certified English translation and a course-by-course credential evaluation from any National Association of Credential Evaluators, Inc (NACES) or the Association of International credential Evaluators, Inc. (AICE) approved agency certifying equivalency to the U.S. degree. Documents signed by a notary or other public official with no educational affiliation will not be accepted.

**DEGREE PROGRAM REQUIREMENTS**

**Total Minimum Program Hours**

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<tr>
<th>CORE REQUIREMENTS</th>
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<tr>
<td>HIM 6667 Foundation in Management Information Systems</td>
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<tr>
<td>HIM 6118 Introduction to Health Informatics</td>
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<tr>
<td>HIM 6350 E-Medicine Business Models</td>
<td>3</td>
</tr>
<tr>
<td>HIM 6114 Integrated Electronic Medical Records</td>
<td>3</td>
</tr>
<tr>
<td>HIM 6320 Managerial Communications</td>
<td>3</td>
</tr>
<tr>
<td>HIM 6017 Legal Aspects of Health Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>HIM 6840 Case Studies in Health Information Management</td>
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</tr>
<tr>
<td>ISM 6930 Selected Topics: Health Data Management</td>
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<tr>
<td>HIM 6018 e-Healthcare Ethics</td>
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**Electives**

Two or more required:

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<tr>
<th>Electives</th>
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<tbody>
<tr>
<td>HIM 6137 Pharmacy Informatics</td>
<td>3</td>
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<tr>
<td>HIM 6943 Health Informatics Internship</td>
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<tr>
<td>HIM 6908 Health Informatics Independent Study</td>
<td>3</td>
</tr>
<tr>
<td>MHS 6645 Mental Health Informatics</td>
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</table>
Internship Project
For students who select the Internship option, each student will be assigned a faculty director who will oversee the internship project. Students will formally present their projects which will be shared with all program participants.

A minimum of thirty-two (32) semester hours are required and entail a minimum of 480 contact hours

COURSES
See [http://ugs.usf.edu/course-inventory](http://ugs.usf.edu/course-inventory)
MEDICAL SCIENCES PROGRAM

Master of Science in Medical Sciences (M.S.M.S.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
   Fall: June 1

Minimum Total Hours: 30
Program Level: Masters
CIP Code: 26.9999
Dept Code: MED
Program (Major/College): MSG MD
Approved: 1983

Concentrations:
   Aging and Neuroscience (ANS)
   Anatomy (ANA)
   Biochemistry and Molecular Biology (BMB)*
   Clinical and Translational Research (CTR)
   Health Science (HSC)
   Health Informatics (HIN)
   Interdisciplinary Medical Sciences (IMS)
   Medical Microbiology and Immunology
   Metabolic and Nutritional Medicine
   Molecular Medicine (MLM)
   Women’s Health (WSH)
* closed for admissions; not accepting applications

CONTACT INFORMATION

College: Medicine
Department: Medical Sciences
Contact Information: www.grad.usf.edu
Website: http://health.usf.edu/medicine/graduatestudies/index.htm

PROGRAM INFORMATION

The program is designed to provide students with advanced training in either Anatomy, Biochemistry, Medical Microbiology, or Pharmacology. Students successfully completing the program will have a foundation that will prepare them for a professional degree in biomedical science such as a M.D. or Ph.D. or qualify them to work as teachers or research assistants in academia or in the private sector. The program will provide a solid core of training in the latest findings, concepts, and experimental techniques. Students will be allowed to individualize their training through elective courses and will have the opportunity to conduct laboratory research. The program is intended for students who wish training beyond a baccalaureate degree but do not wish to commit to a Ph.D. program or do not meet the qualifications required for admissions into a M.D. or Ph.D. program.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools.

ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

Program Admission Requirements
   • A bachelor’s degree or equivalent from a regionally accredited university
   • Minimum overall grade-point average of 3.0 out of a possible 4.0 with a minimum grade-point average of 3.0 in the sciences*
   • GRE or MCAT
• Completed pre-requisites in:
  o General biology (1 year)
  o General chemistry (1 year)
  o General physics (1 year)
  o Organic chemistry (1 year)
  o Quantitative analysis (1 course)
  o Mathematics including integral and differential calculus

APPLICATION PROCEDURES

DEGREE PROGRAM REQUIREMENTS

Degree requirements are individualized according to the educational and research interests and goals.

Total Minimum hours

<table>
<thead>
<tr>
<th>Core Requirements</th>
<th>30</th>
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<tbody>
<tr>
<td>Core Course:</td>
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<tr>
<td>GMS 6871 Health Sciences Ethics</td>
<td>2</td>
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</tbody>
</table>

Pre-Professional Track: (30 hours minimum in addition to core requirement)

Students are required to complete the following, chosen in consultation with Program Advisor.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>GMS 6605 Basic Medical Anatomy</td>
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<tr>
<td>GMS 6630 Basic Medical Histology</td>
<td>3</td>
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<tr>
<td>GMS 6201 Basic Medical Biochemistry</td>
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<tr>
<td>GMS 6706 Basic Medical Neuroscience</td>
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<tr>
<td>GMS 6012 Basic Medical Genetics</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6141 Basic Medical Immunology &amp; Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>GMS 6433 Clinical Correlations in Molecular Medicine</td>
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<td>GMS 6440 Basic Medical Physiology</td>
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<td>GMS 6111 Basic Medical Pathology</td>
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<tr>
<td>GMS 6505 Basic Medical Pharmacology</td>
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Electives Course

<table>
<thead>
<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>GMS 6000 Medical Sciences Success Skills</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Concentration Options:

Students who prefer to take a Concentration instead of the Pre-Professional Track may choose from the following concentrations. Requirements for each are listed on the following pages:

- Aging and Neuroscience (ANS)
- Anatomy (ANA)
- Athletic Training (ATL)
- Clinical and Translational Research (CTR)
- Health Informatics (HIN)
- Health Science (HSC)
- Interdisciplinary Medical Sciences (IMS)
- Metabolic and Nutritional Medicine
- Molecular Medicine (MLM)
- Women’s Health (WSH)
CONCENTRATIONS

AGING AND NEUROSCIENCE (ANS)

Neuroscience is one of the fastest growing fields of biomedical sciences. There is an increasing demand for health care professionals and research scientists to meet the needs of the increasing number of the aging population affected with neurodegenerative diseases such as Alzheimer’s disease. The Aging and Neuroscience concentration within the master’s program in Medical Sciences has been developed in collaboration with the School of Aging Studies to integrate neuroscience as well as biomedical aging in one-year curriculum. The program is targeted for students interested in pursuing a medical, professional degree or further graduate education in biomedical sciences and in aging studies. The core curriculum focuses on basic and applied neuroscience, with emphasis on neurodegenerative diseases. Classes on research methods, stem cell biology, neuropharmacology and other basic biomedical sciences, as well as several classes offered by the school of Aging Studies are offered as electives. The students can elect to engage in a research component where they will be supervised by mentors from the USF research faculty or affiliated institutes. Program graduates can pursue further professional training in medicine and allied health sciences, continue their graduate education in neuroscience or aging studies, or work in the diverse health care fields, especially those catered to the aging population.

Concentration Core Requirement:
GMS6020 Neuroscience (Interdisciplinary) 4-6

Required Courses:
GMS7930 Aging and Neuroscience (Neurosurgery) 3
GMS7930 Neuroscience Seminar Series (Neurosurgery) 1
GEY 6613 Physical Change and Aging (Aging Studies) 3
GMS7910 Aging and Neuroscience Directed Research (neurosurgery) 3-12

All students are required to have a minimum of 20 hours of didactic lectures, and a minimum of 6 hours of directed research. Only students who opt for a research paper must and can accumulate a minimum of 15 hours of directed research and laboratory rotations in their mentor/mentors’ laboratories.

Electives
A minimum of 10 credit hours must be fulfilled by COM elective courses.

Morsani College of Medicine Courses
GMS6091 Ethics and Skills in Research (Interdisciplinary) 2
GMS6404 Systems Neurophysiology (Physiology) 4
GMS6602 Neural Correlates of Behavior (Pathology and Cell Biology) 3
GMS6610 Advanced Neuroanatomy (Pathology and Cell Biology) 4
GMS6200 Biochemistry, Molecular & Cellular Biology (Molecular Medicine) 5
GMS7930 Aging/Neuroscience Lab Rotations (Neurosurgery) 3
GMS6735 Neuropharmacology (Pharmacology) 3
GMS7930 Stem Cells in Brain Repair (Neurosurgery) 3
GMS7930 Spec Topics in Alzheimer’s Disease (Neurosurgery) 1
NUR6931 Psychoneuroimmunology (Nursing) 3
PCH6050 Biostatistics (Public Health) 3

School of Aging Elective Courses
GEY6600 Human Development 3
GEYS620 Sociological Aspects of Aging 3
GEY6450 Gerontological Research and Planning 3
GEY6614 Psychopathology and Aging I 3
GEY6934 Alzheimer’s Diseases Management 3
GEY6616 Mental Health Assessment in Older Adults 3

Graduate students must maintain an overall average of 3.0 (B) in all courses.
ANATOMY

Total Minimum Hours - 31
In addition to the Core requirements (GMS 6871 – 2 hrs), students complete:

Concentration Core Requirements (27 hours):
- GMS6610 Advanced Neuroanatomy 3
- GMS6604 Human Embryology 3
- GMS6608 Pathology Case Studies 5 2
- GMS6609 Advanced Gross Anatomy 3
- GMS6605 Basic Medical Anatomy 3
- GMS630 Basic Medical Histology 3
- GMS6601 Introduction to Laboratory Medicine 2
- GMS 6323 Pathology Case Studies 1 2
- GMS 6324 Pathology Case Studies 2 2
- GMS6606 Pathology Case Studies 3 2
- GMS6607 Pathology Case Studies 4 2

Electives (Minimum 2 credit hours):
- GMS6334 Pathobiology of Human Cancer 3
- GMS 6671 A Brief History of Medical Sciences 2
- GMS7910 Directed Research 2
- GMS 7939/6611 Obesity, hormones and cancer 2
- GMS 6111 Pathobiology of Human Cancer 3

BIOCHEMISTRY AND MOLECULAR BIOLOGY

Contact program for information - Closed for admissions; not accepting applications

CLINICAL AND TRANSLATIONAL RESEARCH (CTR)

Admission Criteria
This is a one-and-a-half to two-year program of both didactic coursework and mentored research. Admission criteria will be to the Scholars in Patient-Oriented Research (SPOR) Program and include the following:
- Must have a doctoral or first professional degree (M.D., D.O., Ph.D., D.D.S., Pharm.D., Dr.P.T., Doctorate of Nursing Practice, Ph.D. in Nursing, or equivalent degrees)
- GRE score will be waived and replaced by a requirement for documentation of a professional doctorate degree.
- NIH eligibility for the SPOR Program requires U.S. citizenship or status as a non-citizen national or lawfully admitted permanent resident of the U.S.
- Applicants will be required to complete a 2-step application process.
  - For Step 1 to enter the SPOR Program there is an online application.
  - Upon acceptance into the SPOR Program, Step 2 of the application process will consist of completing the standard application procedures to become a graduate degree-seeking student in the Master of Science in Medical Sciences degree program.

Concentration Degree Requirements
Minimum of 32 hours of credit, (23 hours core coursework, 6 hours directed research, and remaining 3 required hours in any combination of directed research and/or elective courses, as needed for each SPOR scholar’s particular research focus. In addition, each SPOR scholar will be required to submit a first author manuscript based on his/her research project (not a review article) to a peer-reviewed journal, and that manuscript must be judged by an appointed sub-
panel of the SPOR Program Executive Committee and Key Faculty to be potentially acceptable for publication. This latter requirement is in lieu of a thesis requirement.

<table>
<thead>
<tr>
<th>Coursework:</th>
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<tbody>
<tr>
<td>GMS6875 Ethical &amp; Regulatory Aspects of Clinical Research</td>
<td>2</td>
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<tr>
<td>GMS6840 Cultural Influences &amp; Diversity Issues in Clinical Research</td>
<td>2</td>
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<tr>
<td>GMS6844 Special Topics: Principles of Patient-Oriented Research</td>
<td>1</td>
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<tr>
<td>PHC6050 Biostatistics I</td>
<td>3</td>
</tr>
<tr>
<td>PHC6000 Epidemiology</td>
<td>3</td>
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<tr>
<td>GMS6841 Fundamentals of Translational and Team Research</td>
<td>1</td>
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<tr>
<td>GMS6843 Scientific Communication</td>
<td>2</td>
</tr>
<tr>
<td>BCH6627 Metabolic and Genetic Basis of Disease</td>
<td>3</td>
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<tr>
<td>or another Basic Science course for 3 credits with approval</td>
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<tr>
<td>GMS6905 Grantsmanship I</td>
<td>1</td>
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<tr>
<td>GMS6906 Grantsmanship II</td>
<td>1</td>
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<tr>
<td>PHC6020 Design and Conduct of Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td>GMS6921 Colloquium on Building a Successful Academic Patient-Oriented Research Career</td>
<td>1</td>
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Mentored Clinical and Translational Research/Directed Research 6
Electives/Mentored Clinical and Translational Research/Directed Research 3

HEALTH INFORMATICS (HIN)

Concentration Core Requirements:
GMS 7930 Health Sciences Ethics 2

Required Courses: (24 credits)
HIM 6XXX Foundation in Management Information Systems 3
HIM 6118 Introduction to Health Informatics 3
HIM 6350 E-Medicine Business Models 3
HIM 6114 Integrated Electronic Medical Records 3
HIM 6320 Managerial Communications 3
HIM 6012 Legal Aspects of Health Information Systems 3
HIM 6XXX Case Studies in Health Information Management 3
ISM 6127 Decision Support Systems Analysis & Design 3

Electives: (2 or more required, can be taken in any semester offered)
HIM 6XXX Pharmacy Informatics 3
HIM 6XXX Health Informatics Internship 3
GMS 6908 Medical Sciences Independent Study 3
MHS 6645 Mental Health Informatics 3
PHC 6934 Medical Terminology 3
ISM 6123 Systems Analysis & Design 3
ISM 7120 Information Requirements Management 3
PHC 6050 Biostatistics 3
BCH 6888 Bioinformatics 3

HEALTH SCIENCE (HSC)

100% ONLINE. Health sciences, the study and research of the human body and health-related issues, are critical to our understanding of how humans function. The knowledge gained from these studies is vital to today's mission of improving health and preventing and curing diseases. In the new millennium, in which science truly complements the art of medicine, advances in the health sciences contribute to our understanding of the structure and function of molecules key to normal body function and the pathogenesis of disease and to design new approaches for diagnosis, treatment and prevention. Recent changes in research and scholarship in the biomedical sciences has directed attention to the development and training of students who are able cross the barriers of traditional disciplines and embrace the concepts of interdisciplinary approaches to biomedical problems. The Health Sciences concentration,
within the Master’s Program in Medical Sciences, has been developed to provide a new interdisciplinary and concentrated program of study that is designed for students interested in either future doctoral professional programs in the biomedical sciences. The program integrates an array of disciplines, including anatomy, biochemistry, histology, physiology, genetics, microbiology, immunology, pathology, pharmacology and ethics to provide a solid medically-relevant foundation. The rigorous program allows students to demonstrate their full academic ability for future graduate programs or medical school. The interdisciplinary program promotes the broad intellectual focus required of future graduate or professional students in the biomedical sciences or health-care related fields. The courses integrate modern distance teaching methods and are designed to improve their academic skills that are critical to their future professional development.

Curriculum

Course Requirements: 32 hours

- GMS6605 Basic Medical Anatomy 3 credits
- GMS6630 Basic Medical Histology 3 credits
- GMS6201 Basic Medical Biochemistry 3 credits
- GMS6706 Basic Medical Neuroscience 3 credits
- GMS6012 Basic Medical Genetics 3 credits
- GMS6141 Basic Medical Immunology & Microbiology 3 credits
- MCB6433 Clinical Correlations in Molecular Medicine 3 credits
- GMS6871 Health Sciences Ethics 2 credits
- GMS6440 Basic Medical Physiology 3 credits
- GMS6111 Basic Human Medical Pathology 3 credits
- GMS6505 Basic Medical Pharmacology 3 credits

INTERDISCIPLINARY MEDICAL SCIENCES (IMS)

This concentration within the Master's degree in Medical Sciences program is designed to provide qualified students with advanced training in the sciences basic to the practice of medicine. Students successfully completing the program will have a foundation that fosters opportunities in the private sector, teaching, or the pursuit of further advanced degrees. A goal of this concentration is to provide promising medical school applicants an opportunity to develop the knowledge, skills, and attitudes that would enable them to have a career in the medical sciences. Students who perform well during this program could be considered for admission to medical, graduate, or other health professions programs. This concentration provides an opportunity for students interested in graduate work that has a broad medical base. Students will take courses that will provide the same level of depth, breadth and intensity as those taken by a first year medical student. This will allow successful participants to demonstrate their readiness for the rigors of a medical school curriculum. Alternatively, appropriate selection of elective courses will allow any student who completes the program to tailor their educational experience to best suit their future plans and aspirations.

Admission Information:

Applicants must hold a Bachelor’s degree from an accredited institution at the time of entrance into the program. They must have completed at least 1 year each of General Chemistry, Organic Chemistry, General Biology and General Physics and have achieved a total score of at least 22 on the MCAT. Applicants who are deficient in one or more of these requirements, but otherwise meet the College-wide requirements for admission to the Master's Program may be considered on a case by case basis.

Total Minimum Hours for the MSMS with a concentration in IMS: 31 hours

Program Core Courses

- GMS 6871 Health Sciences Ethics 2 credits

Required Concentration Courses:

- GMS 6418 Musculoskeletal System 3 credits
- GMS 6054 Cancer Biology 3 credits
- GMS 6004 Introduction to Medical Sciences 5 credits
- GMS 6707 Medical Neuroscience 6 credits
- GMS 6411 Cardiovascular and Pulmonary Systems 6 credits
- GMS 6419 Excretory, Endocrine and Reproductive Systems 6 credits
Elective Courses
Students may select elective courses with the approval of the Program Director.

GMS 6110 Microbial Pathogenesis and Host Parasite Interactions 3 credits
GMS 6115 Medical Parasitology and Mycology 3 credits
GMS6141 Basic Medical Microbiology and Immunology 3 credits
GMS7930 Selected Topics 1-3 credits
GMS6908 Medical Sciences Independent Study 1-3 credits

Total minimum hours: 31

MEDICAL MICROBIOLOGY AND IMMUNOLOGY
Core Course
GMS6200C Biochemistry, Cell & Molecular Biology 5

Required Courses
GMS6100C Medical Microbiology 3
GMS7930 Medical Parasitology and Mycology 2
GMS6101 Molecular and Cell Immunology 3
GMS6107 Adv in Virology 2
GMS6110 Microbial Pathogenesis and Host-parasite Interactions 3
BCH6411 Biomedical Genomics and Genetics 4

Electives
Select one course of the following (2 hrs minimum)
BCH6935 Grant Writing and Scientific Communication 2
BSCG6436 Intro to Biotech 3
GMS6876 Current Topics in Molecular Medicine 1

Select one or more from the following (9 hrs minimum):
GMS7910 Directed Research 3-9
GMS6114 Vaccines and Applied Immunology 2
BCH6135C Methods in Molecular Biology 4
BCH6420 Clinical Correlations in Molecular Medicine 3

Total minimum hours: 32

METABOLIC AND NUTRITIONAL MEDICINE
Total Minimum Hours 32

Program Core Courses (2 hours)
GMS 6871 Health Sciences Ethics 2

Required Courses:
GMS6455 Clinical Intensives in Metabolic and Nutritional Medicine 3
GMS6441 Clinical Approach to Endocrinology 3
GMS6543 Diabetes and Coronary Heart Disease 3
GMS6751 Integrated Clinical Neurobiology 3
GMS6451 Nutrition and Metabolism 3
GMS6454 Functional Medicine and Infectious Disease 3
GMS6752 Autoimmune Diseases and Cognitive Function 3
GMS6340 Laboratory Fundamentals and Adjunct Cancer Therapies 3

Electives:
GMS 6240 Metabolic Approaches to Pediatrics 3
GMS 6550 Introduction to IV Therapies 3
MOLECULAR MEDICINE (MLM)

Considered the vanguard of the new millennium in which science truly complements the art of medicine, molecular medicine strives to understand the molecules key to normal body function and the pathogenesis of disease and to design molecular tools for diagnosis, treatment and prevention. Recent changes in research and scholarship in the biomedical sciences has directed attention to the development and training of students who are able to cross the barriers of traditional disciplines and embrace the concepts of interdisciplinary approaches to biomedical problems. The Molecular Medicine concentration, within the Master’s Program in Medical Sciences, has been developed to provide a novel interdisciplinary and concentrated program of study that is designed for students interested in either future doctoral or professional programs in the biomedical sciences. The program integrates several disciplines, including biochemistry, molecular biology, genetics, genomics, microbiology, immunology, virology and biomedical ethics to provide a solid medically-relevant foundation. The rigorous program allows students to demonstrate their full academic ability for future graduate programs or medical school. The interdisciplinary program promotes the broad intellectual focus required of future graduate students in the biomedical sciences or health-care profession. The courses integrate modern teaching methods with extensive student participation designed to improve their oral and presentation skills that are critical to their future professional development.

Core requirements: 6 hours

GMS6200C  Biochemistry, Molecular and Cellular Biology  1
BCH6935    Grant Writing and Scientific Communication  2
GMS6100    Medical Microbiology  3

Course Requirements: 3

BCH6411    Biomedical Genomics and Genetics  1
GMS6101    Molecular and Cellular Immunology  3-4
GMS6110    Microbial Pathogenesis and Host-Parasite Interactions  3
GMS7930    Clinical Correlations in Molecular Medicine  3
BCH6627    Metabolic and Genetic Basis of Human Diseases  3
GMS6114    Vaccines and Applied Immunology  3

Electives  3

BCH6135C  Methods in Molecular Biology  3
GMS6104    Cellular Immunology  3
GMS6107    Advances in Virology  3
BCH6746    Proteomics and Structural Biology  3
BCH6888    Bioinformatics  3

http://health.usf.edu/medicine/
WOMEN’S HEALTH (WSH)
This innovative, interdisciplinary program, the first in Florida to provide an integrated approach to the subject area of holistic women’s health, is designed to develop leaders in the field of women’s health. The program, which has been constructed to prepare students for future educational or research endeavors in graduate or medical schools or health practice institutions, is designed to fulfill the M.S. M.S. Women’s Health Concentration increasing demand for trained individuals in this emerging area, which focuses on gender-specific issues. The program is founded on the premise that future health-care providers, researchers and educators will require extensive interdisciplinary training in order to develop novel solutions to current biomedical problems in women’s health. The interdisciplinary curriculum has been designed to provide the background training that will equip students with the essential tools for a successful career in the field of women’s health.

The program requires a minimum of 32 credit hours, which can be completed in one year of accelerated and intense study. Core courses provide both foundation and advanced training while electives in such topics as reproductive women’s cancers, endocrine mechanisms, clinical nutrition, the business side of medicine and biostatistics, provide students with additional educational opportunities.

Admission Requirements
- A bachelor’s degree or equivalent from a regionally accredited university in the biological or chemical sciences
- Minimum overall grade-point average of 3.0 out of a possible 4.0 with a minimum grade point average of 3.0 in the sciences
- Graduate Record Examination (MCAT scores can be submitted in lieu of the GRE)

Courses

Core Courses:
- GMS 6871 Health Science Ethics 2
- GMS 6xxx Medicine and Gender 3
- GMS7930 Women’s Health Lab (1-2 Interd.) 2-3
- Elective 2-3 hours
- GMS6334 Pathobiology of Human Cancer 3
- GMS 6452 Clinical Nutrition 3
- PHC6532 Women’s Health Issues 3
- GMS7910 Directed Research (Women’s Health) 3-6 hours Interdisciplinary 3
- Elective 3-6 hours Interdisciplinary
- PCH 6050 Biostatistics 3
- GMS7910 Directed Research (Women’s Health) 3-6 hours Interdisciplinary 5-6 hours

COURSES
See [http://ugs.usf.edu/course-inventory](http://ugs.usf.edu/course-inventory)
MEDICAL SCIENCES PROGRAM

Doctor of Philosophy (Ph.D.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
   Fall: February 1

Minimum Total Hours: 90
Program Level: Doctoral
CIP Code: 26.9999
Dept Code: MED
Program (Major/College): MSG MD
Approved: 1974

Concentrations:
   Allergy Immunology & Infectious Disease (AII)
   Anatomy (ANA)
   Biochemistry and Molecular Biology (BMB) *
   Clinical and Translational Research (CTR)
   Microbiology and Immunology (MMI) *
   Molecular Medicine (MLM)
   Molecular Pharmacology and Physiology (MPY)
   Neuroscience (NEU)
   Pathology and Cell Biology ((PCB)
   Pathology and Laboratory Medicine (PLM)
   Pharmacology and Therapeutics (PAT)
   Physiology and Biophysics (PAB)
* Closed for admissions; not accepting applications

CONTACT INFORMATION

College: Medicine
Department: Medical Sciences
Contact Information: www.grad.usf.edu
Website: http://health.usf.edu/medicine/graduastudies/index.htm

PROGRAM INFORMATION

The program is designed to provide students with a broad knowledge in the basic medical sciences, while preparing them for careers as effective and knowledgeable teachers, as well as productive and versatile researchers. To meet these objectives, students take courses in the medical sciences and related areas, participate in seminars, and receive individual research training. Departmental advisory committees counsel the entering students in planning their first year curriculum. In addition to course work and participation in seminars, first year students are expected to become familiar with ongoing research in their chosen department; when possible, they are encouraged to work on a part-time basis as research assistants in their department. Once the student selects a major professor, a formal dissertation committee is appointed. The dissertation committee assists the student in planning the research and course of study, evaluates the student’s progress, supervises the comprehensive examination, and conducts the final dissertation defense.

By the end of the second year, a student has usually completed sufficient course work and met the other research requirements to take the comprehensive qualifying examination. Successful completion of this examination leads to formal admission to candidacy for the Ph.D. degree. The final phase of the program emphasizes research and independent study and leads to a written dissertation. The Ph.D. degree is awarded upon successful completion and oral defense of the dissertation. Departments within the Morsani College of Medicine may have additional requirements that pertain to their respective training program. Contact the department for information.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools.

http://health.usf.edu/medicine/
Major Research Areas:
Allergy, Immunology and Infectious Diseases Cancer Biology, Cardiovascular Research, Neuroscience & Neurodegenerative Diseases, Diabetes/Metabolic Disorders

ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below.

Program Admission Requirements

- A bachelor’s degree or equivalent from a regionally accredited university
- Minimum overall grade-point average of 3.00 out of a possible 4.00 with a minimum grade-point average of 3.00 in the sciences
- GRE- Graduate Record Examination (preferred at the 70th percentile or above)
- Completed pre-requisites in:
  - General biology (1 year)
  - General chemistry (1 year)
  - General physics (1 year)
  - Organic chemistry (1 year)
- Three (3) letters of recommendation
- Personal Interview
- One-two page personal statement
- Research experience preferred

Application Procedures
Please refer to http://health.usf.edu/medicine/graduatestudies/phd/apply_phd.htm

DEGREE PROGRAM REQUIREMENTS

Total Minimum Hours: 90 hours
(including 24 minimum directed research hours)

All students are required to successfully complete the following didactic courses:

- GMS 6001 Foundation in Biomedical Sciences 6
- GMS 6091 Responsible Conduct in Research 1
- GMS 6094 Experimental Design & Analysis 3
- GMS 6002 Success Skills for the Biomedical Science Researcher 1
- BCH 6935 Grant Writing & Scientific Communication 2

Students are also required to complete at least one semester of:

- GMS 6942 Laboratory Rotations in Biomedical Sciences 1-3

Each student shall complete a minimum of 24 credit hours of didactic course work (excluding journal clubs, seminars, laboratory rotations, directed research, etc.). In addition to the required courses listed above (13 credit hours), the student shall fulfill the 24 credit hour minimum by completing coursework in their chosen concentration. The student will work with his/her advisory and dissertation committees to choose appropriate courses from the course list for their chosen concentration.
CONCENTRATIONS:

ALLERGY, IMMUNOLOGY & INFECTIOUS DISEASE
Research and education in the Ph.D. in Medical Sciences Program, concentration in Allergy, Immunology & Infectious Disease is focused on interdisciplinary approaches to the study of how the immune system functions properly to rid the body of foreign pathogens and how the immune system can go awry in autoimmunity. The process by which microbes interact with the host to cause disease is also a focus of this program.

ANATOMY

BIOCHEMISTRY AND MOLECULAR BIOLOGY - Closed for admissions; not accepting applications

CLINICAL AND TRANSLATIONAL RESEARCH
Cardiovascular disease is the leading cause of death, in the United States Atherosclerotic coronary artery disease, valvular heart disease, diseases of the heart muscle, electrical disturbances of the heart rhythm, high blood pressure, stroke, and peripheral vascular disease all contribute to this morbidity. According to current estimates, coronary heart disease, high blood pressure, congestive heart failure and stroke affect nearly 58 million Americans. The USF Signature Interdisciplinary Program in Cardiovascular Research is a comprehensive program that brings together resources in heart care, research and education to fight against cardiovascular disease. Clinicians and researchers at USF are working to improve our knowledge of cardiovascular disease in order to develop new methods of prevention and treatment that will make a difference in the lives of patients with cardiovascular disorders.

MEDICAL MICROBIOLOGY AND IMMUNOLOGY - Closed for admissions; not accepting applications

MOLECULAR MEDICINE
Research and education in the Ph.D. in Medical Sciences Program, concentration in Molecular Medicine is focused on interdisciplinary approaches to the study of bacteriology, biochemistry, immunology, molecular biology and virology as it relates to human health and disease such as allergy and immune dysfunction, cancer, cardiovascular disorders, infectious diseases and inheritable defects. Training will include a unique interdisciplinary blend of didactic coursework, journal clubs, seminar series, as well as significant research experience.

MOLECULAR PHARMACOLOGY & PHYSIOLOGY
Research and education in the Ph.D. in Medical Sciences Program, concentration in Molecular Pharmacology and Physiology is focused on interdisciplinary approaches to the study of the nervous and cardiovascular systems and related disorders, including Alzheimer’s disease and other neurodegenerative disorders, cardiovascular disease and stroke, diabetes, and neuropsychiatric disorders such as depression and drug addiction. Training will include a unique interdisciplinary blend of didactic coursework, journal clubs, seminar series, as well as significant research experience.

NEUROSCIENCE
Research and education in the Ph.D. in Medical Sciences Program, concentration in Neuroscience is focused on interdisciplinary approaches to the study of the nervous systems and related disorders, including Alzheimer's disease and other neurodegenerative disorders, stroke, and neuropsychiatric disorders such as depression and drug addiction. Areas of expertise include biochemistry and cellular and molecular neuroscience, neural systems and computational neuroscience, behavioral neuroscience, developmental neuroscience, neuroimmunology, and neuropsychopharmacology, among others. Students are encouraged to carry out research during their entire period of study. Training will include a unique interdisciplinary blend of didactic coursework, journal clubs, seminar series, as well as significant research experience. The interdisciplinary structure permits considerable flexibility in training; each student’s training is tailored to meet individual requirements.

PATHOLOGY & CELL BIOLOGY
Research and education in the Ph.D. in Medical Sciences Program, concentration in Pathology & Cell Biology is focused on interdisciplinary approaches to the study of cancer, reproductive pathobiology, neurological disease & injury and related diseases, including cancer biology, angiogenesis and morphogenesis, gene discovery, neurobiology, cell biology and new educational technologies.

http://health.usf.edu/medicine/
PATHOLOGY AND LABORATORY MEDICINE

PHARMACOLOGY AND THERAPEUTICS

PHYSIOLOGY AND BIOPHYSICS

Electives
Some of the electives include:

- BCH 6746 Structural Biology 3
- GMS 6115 Medical Parasitology & Mycology 3
- GMS 6708 Neuroimmunology 3

Dissertation

COURSES
See http://ugs.usf.edu/course-inventory
MEDICINE PROGRAM

Doctor of Medicine (M.D.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
Fall: November 14

Minimum Total Hours: Four Years
Program Level: Doctoral Professional
CIP Code: 51.1201
Dept Code: MD
Program (Major/College): MED MD

CONTACT INFORMATION

College: Medicine
Department: MD
Contact Information: www.health.usf.edu/medicine/mdprogram

PROGRAM INFORMATION

The Morsani College of Medicine offers a traditional program and a parallel program that give you a choice of emphasis and geographical focus.

The CORE program is based in Tampa for four years and features a strong preclinical integrated curriculum with small group and engaged learning emphasis, integrated clerkships, and year 4 career tracks that prepare you for the residency of your choice. The Scholarly Concentration option allows you to focus and develop yourself in an area of interest outside the normal curriculum in fields such as Health Care Disparities, Engineering, Business, and Medical Education.

The SELECT program is based in Tampa (2 years) and Lehigh Valley, Pennsylvania (2 years). It has the same integrated curriculum focus as the CORE program, but also offers additional training in Leadership, Health Systems, and Values-Centered Patient Care, all important domains for developing medical leadership. This increased emphasis on leadership (in one on one coaching, small groups, seminars) is a focused alternative to the Scholarly Concentration program for students who want to focus on developing their medical leadership skills.

Accreditation
Accredited by the Commission on Colleges of the Southern Association of College and Schools.

Major Research Areas

Biomedical research
International Medicine
Medical Education
Health Systems
Health Disparities
Admission Information

Program Admission Requirements:
Students applying for admission to the USF Morsani College of Medicine (MCOM) M.D. program must complete the requirements for a bachelor’s degree at a regionally accredited U.S. university or college by the time of matriculation. In addition, all prerequisites must be completed from a U.S. regionally accredited institution by the time of matriculation into the MCOM. Required coursework may not be taken as Pass/Fail or online. Applicants who are currently pursuing a graduate or professional degree are obligated to complete all degree requirements prior to matriculation into the M.D. program.

- AMACS Primary Application
- Secondary Application with program selection
- Bachelor’s Degree (from U.S. regionally accredited institutions only)
- Pre-professional committee evaluation or three faculty letters of recommendation
- Two personal / character letters of recommendation
- Personal Statement
- Interview
- Completion of prerequisite courses
- Medical College Admissions (MCAT)
- Residency – must be either a U.S. Citizen or Permanent Resident of the U.S.

Degree Program Requirements:

Required Core Curriculum Descriptions

Doctoring 1-3
A three-year small group-based sequence that teaches students interviewing, physical diagnosis, and differential diagnostic skills; bioethics, medical humanities, health systems and economics; community, preventive, and public health. Introduces care of special populations including the disabled.

Evidence-based Clinical Reasoning 1-2
A two-year sequence first introducing students to principles of statistics and evidence-based medicine, then applying that knowledge in small group based problem based learning (PBL) cases in which students research topics relevant to the presented cases and teach their small group peers what they learned. The course emphasizes evidence-based and lifelong learning principles.

Year 1-2 Medical Science Courses
Years 1 and 2 of the curriculum are a continuum that introduce students to an organ system-based overview of normal and disease processes, increasing the emphasis on diseases and therapy as the courses progress. Courses integrate anatomy, physiology, pathophysiology, cell biology, biochemistry, microbiology and pharmacology relevant to the organ systems under study.

- Course 1: Musculoskeletal System - dissection based anatomy of the back and extremities; physiology and biochemistry of muscle contraction
- Course 1: Cancer biology - a review of important tenets of molecular/cellular biology, genetics and immunology from the perspective of cancer pathogenesis and treatment.
- Course 2: Neurologic System - structure and function of the central and peripheral neurologic system
- Course 3: Cardiovascular and Pulmonary Systems - normal function, common abnormalities, and structural anatomy of the heart, lungs and vessels; components and physiology of blood.
Course 4: Renal, Endocrine, Gastrointestinal, and Reproductive Systems - integrated histology, physiology and gross anatomy of these systems; biochemistry and physiology of metabolism.

Course 5: Immunology, Microbiology, Hematology, Rheumatology, Dermatology - principles of immune host defense, microbial pathogenesis; autoimmunity/rheumatologic diseases; diseases of blood and skin.

Course 6: Nephrology, Pulmonary Disease, Cardiology, Gastroenterology - pathophysiology, pathology, and pharmacology for diseases of kidneys, lungs, heart/vessels, liver, and GI tract.

Course 7: Neurology, Psychiatry, Endocrinology, Men’s and Women’s Health - diseases and therapy of the brain and peripheral nervous system, endocrine system, male and female reproductive tracts; psychiatry, including psychiatric interviewing.

Colloquium 1-2 
Selective seminars in several areas of the students’ choice (e.g. advances in radiology, sun and skin, neurosurgery principles, etc.) designed to give the students elective choice in developing career plans. Taken twice, once per year.

Year 3 Clinical Clerkships 
MCOM clinical clerkships in Tampa emphasize integrative process of patient care from a patient perspective, vs. the traditional departmental-based approach. Multiple departments interact to deliver the curriculum at core clinical sites including Tampa General Hospital, Haley VA Medical Center, All Children’s Hospital, and Morsani Center for Advanced Patient care. The year includes 4 weeks of elective time of the student’s choice to explore non-clerkship career options or do research.

Primary Care - outpatient care in Family Medicine, Internal Medicine, Pediatrics, and Women’s Health/Gynecology, emphasizing management of common chronic diseases and prevention strategies.

Adult Medicine - inpatient care of acute adult illness

Surgical Care - principles of pre-, intra-, and post-operative care, with rotations in general, trauma, vascular, and gynecologic surgery. Includes selective rotations in surgical subspecialties and simulation training at the Center for Advanced Medical Learning and Simulation (CAMLs) in downtown Tampa.

Psychiatry and Neurology - diagnosis and therapy of neurologic and psychiatric illness in the inpatient and outpatient settings. Shared approaches to patients with altered mental state.

Maternal, Newborn, and Pediatric Care - Obstetrics, prenatal care, labor and delivery, newborn nursery, inpatient pediatric care

Year 4 Electives/Selectives 
Year 4 is focused on preparation for residency, building advanced clinical skills, and exploration of areas of medicine of interest to the student. Nine months of coursework are required, including:

1. Four months of work in a track that prepares students for a specific residency discipline, including:
   a. An Acting Internship with direct patient management responsibility (1 month)
   b. A return to basic science in the discipline of the track, involving both clinical and basic science approaches to the discipline (2-4 weeks)
   c. 1-2 months of specialty, consultative, or other selectives

2. Five months of additional coursework, which may include independent study electives, externships at other approved medical centers, and additional electives of the student’s choice.

http://health.usf.edu/medicine/
SELECT Program Overview

Building Leadership Competencies and Emotional Intelligence
The USF Health Morsani College of Medicine SELECT program (Scholarly Excellence. Leadership Experiences. Collaborative Training.) prepares students to be physician leaders who can accelerate change in health care. The program recruits and develops students with the intellectual perspective, empathy, creativity and passion to change patient care, the health of communities and the medical profession. The founding principle of SELECT is the concept that students with high emotional intelligence are more likely to develop the skills needed to transform health care and improve the health of communities. In essence: students with a strong foundation in emotional intelligence will become more engaged, compassionate physicians who will connect deeply with their patients and their patients’ families; feel more comfortable with and be more effective as team leaders and team members; and have the relationship building skills and systems perspectives to more effectively lead change in health care organizations.

One of the most distinctive features of SELECT is the opportunity for medical students to shape their educational experiences at both a highly progressive, student-centered medical school, the USF Morsani College of Medicine in Tampa, FL, AND at one of the country’s top health networks known for its quality, safety, and lean approach to driving efficiency in healthcare, the Lehigh Valley Health Network in Allentown, PA. The first class was admitted in 2011, and 56 students are now admitted annually. Students admitted to SELECT spend their first two years taking classes at the USF Morsani College of Medicine in Tampa, and then go to Lehigh Valley Campus for two years of clinical education. Students admitted to SELECT develop leadership skills that will arm them with the knowledge, resources, and network to change the healthcare landscape for the better. These include:

- Making a difference in the lives of patients, peers, community, and hospitals.
- Applying continuous improvement approaches to optimize healthcare quality, patient safety, and efficient use of resources.
- Building resilience to operate efficiently in complex health systems.
- Acquiring tools to become a change catalyst.
- Becoming a driving force for the evolution of healthcare quality.
MEDICINE / MEDICAL SCIENCES DUAL PROGRAM

Doctor of Medicine (M.D.) / Doctor of Philosophy (Ph.D.) Dual Degree

DEGREE INFORMATION

Program Admission Deadlines: Contact the Morsani College of Medicine

Minimum Total Hours: 90
Program Level: Doctoral
CIP Code: 26.9999
Dept Code: MED
Program (Major/College): MED MD / MSG MD

Concentrations:
- Allergy Immunology & Infectious Disease (All)
- Anatomy (ANA)
- Biochemistry and Molecular Biology (BMB)*
- Clinical and Translational Research (CTR)
- Microbiology and Immunology (MMI)*
- Molecular Medicine (MLM)
- Molecular Pharmacology and Physiology (MPY)
- Neuroscience (NEU)
- Pathology and Cell Biology (PCB)
- Pathology and Laboratory Medicine (PLM)
- Pharmacology and Therapeutics (PAT)
- Physiology and Biophysics (PAB)

* Closed for admissions; not accepting applications

CONTACT INFORMATION

College: Medicine
Department: Medicine/Medical Sciences
Contact Information: www.grad.usf.edu

PROGRAM INFORMATION

The combined MD/PhD program is designed to provide well-qualified students who are interested in careers in translational medicine with a broad knowledge in the basic biomedical and clinical sciences that is integrated with the advanced experimental training that is critical for their development as productive and versatile researchers. To meet these objectives, student’s complete courses in both the basic and clinical sciences, participate in patient-care activities and seminars, and receive individual research training in one of the many research concentrations available within the College. Program advisory committees counsel the entering students on planning their curriculum and selecting a research mentor. During the first two years, students complete the basic science course work and participation in research rotations that assist in the selection of a dissertation mentor. Following the successful completion of the second year of medical training and the selection of a major professor, a formal dissertation committee is appointed which assists the student in planning the research and course of study, evaluates the student’s progress and supervises the comprehensive examination.

The successful completion of this examination leads to formal admission to candidacy for the PhD degree. The remainder of this phase of the program emphasizes research and independent study and leads to a written dissertation and its oral defense. Following the completion and defense of their PhD dissertation, students embark on the final two years of their medical training. The program culminates in the award of both MD and PhD degrees. Departments within the Morsani College of Medicine may have additional requirements that pertain to their respective portions of the training program. Contact the department for information.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools.

Major Research Areas:
See Morsani College of Medicine website.
ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below. as well as requirements of the Morsani College of Medicine MD and PhD programs, listed below. Student applications must be submitted through AMCAS.

Program Admission Requirements

- A bachelor’s degree or equivalent from a regionally accredited university
- Minimum overall grade-point average of 3.70 out of a possible 4.00 with a minimum grade-point average of 3.7 in the sciences
- Medical College Admissions Test score of 30 (The MCAT substitutes for the GRE).
- Completed pre-requisites in:
  - General biology (1 year)
  - General chemistry (1 year)
  - General physics (1 year)
  - Organic chemistry (1 year)
  - Quantitative analysis (1 course)
  - Mathematics including integral and differential calculus
- Three (3) letters of recommendation
- Interview
- One-two page personal essay

DEGREE PROGRAM REQUIREMENTS

Total Minimum Program Hours 90

Contact programs for complete information. Degree requirements are individualized according to research interests and goals. Ninety credit hours minimum including 24 minimum directed research hours.

COURSES

See [http://ugs.usf.edu/course-inventory](http://ugs.usf.edu/course-inventory)
PHYSICAL THERAPY PROGRAM

Doctor of Physical Therapy (D.P.T.) Dual Degree

DEGREE INFORMATION

Program Admission Deadlines:
July Start
Applications Accepted July 1 – November 15

Minimum Total Hours:
Program Level: Doctoral Professional
CIP Code: 51.2308
Dept Code: PHT
Program (Major/College): MPT MD

CONTACT INFORMATION

College: Morsani College of Medicine
Department: School of Physical Therapy and Rehabilitative Sciences
Contact information: http://dpt.health.usf.edu/

PROGRAM INFORMATION

As an integral part of the USF College of Medicine and USF Health system, the School of Physical Therapy & Rehabilitation Sciences offers you top-notch classroom and clinical experience in your entry-level preparation as a physical therapy practitioner.

Our innovative, integrated, interprofessional Doctor of Physical Therapy (DPT) curriculum, which places physical therapy students alongside medical students in foundational basic and clinical science courses during year 1 of studies, is one of the many reasons students are choosing to come to Tampa for their professional education. The School of Physical Therapy & Rehabilitation Sciences boasts an impressive and broadly experienced cadre of faculty who are engaged in teaching as well as scholarly and research activities contributing to our discipline’s body of knowledge. As part of USF Health, our Doctor of Physical Therapy students receive instruction from physicians, nurses, public health professionals and basic science experts. Teaching and learning together form the basis for future successful collaborative practice so necessary in today’s healthcare environment.

Accreditation
Accredited by the Commission on Colleges of the Southern Association of College and Schools and Commission on Accreditation in Physical Therapy Education (CAPTE)

ADMISSION INFORMATION

Completed applications of qualified students with all supporting documentation, received by PTCAS by November 15, 2016 will be reviewed by the School of Physical Therapy and Rehabilitation Sciences DPT Student Selection Committee. The 48 most qualified applicants will be offered enrollment as a member of the DPT Class of 2020. Letters of offer will be mailed to selected students on or about February 1, 2017. A Waiting List will be maintained of otherwise qualified applicants in the event that a class opening should occur.

Program Admission Requirements

- You must be a U.S. Citizen or Permanent Resident Alien (PRA) with a Green Card in your possession before we will consider your application;
- Minimum 3.2 (out of 4.0) GPA overall and in upper division and prerequisite coursework;
• Note: Level of prerequisite courses must be appropriate for science majors, and must have been completed within five (5) years of date of matriculation;
• Twenty (20) total volunteer, observational or employment hours experience with a minimum of 8 hours in each type in order to appreciate the differences in physical therapists’ responsibilities in each setting. Hours must be documented observational, volunteer or other work experiences in both hospital inpatient and outpatient physical therapy settings;
• Two References from Licensed Physical Therapists with knowledge of the applicant’s aptitude and potential for success in professional school
• Application to be completed through PTCAS

DEGREE PROGRAM REQUIREMENTS

The DPT program is a 3 calendar year program including two summers.

Core Course Requirements
Year 1 (36 weeks)

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BMS 5005 Professions of Health</td>
<td>1</td>
</tr>
<tr>
<td>BMS 6206 Medical Biochemistry</td>
<td>1</td>
</tr>
<tr>
<td>BMS 6640 Medical Science 1: Musculoskeletal System</td>
<td>6</td>
</tr>
<tr>
<td>BMS 6641 Medical Science 2: Neuroscience</td>
<td>6</td>
</tr>
<tr>
<td>BMS 6633 Medical Science 3: Cardiovascular &amp; Pulmonary Systems</td>
<td>6</td>
</tr>
<tr>
<td>BMS 6639 Medical Science 4: Excretory &amp; Reproductive Systems</td>
<td>6</td>
</tr>
<tr>
<td>PHT 6174 Movement Science 1 (total lab hours including enhanced anatomy=30)</td>
<td>2</td>
</tr>
<tr>
<td>PHT 6205 Doctoring for Physical Therapists (Pass/Fail)</td>
<td>6</td>
</tr>
<tr>
<td>PHT 6274 Clinical Reasoning for Physical Therapists</td>
<td>5</td>
</tr>
<tr>
<td>PHT 6284 Scientific &amp; Professional Foundations of Physical Therapy 1 (lab=60 hrs)</td>
<td>5</td>
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<tr>
<td>PHT 7864 Integrated Clinical Experience 1</td>
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Year 2 (42 weeks)

<table>
<thead>
<tr>
<th>Course Name</th>
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<tr>
<td>Fall 2 Contact hours @ 19 weeks = 26.6</td>
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</tr>
<tr>
<td>PHT 6178 Movement Science 2</td>
<td>3</td>
</tr>
<tr>
<td>PHT 6285 Scientific &amp; Professional Foundations of Physical Therapy 2</td>
<td>3</td>
</tr>
<tr>
<td>PHT 6352 Pharmacology for Healthcare Professionals</td>
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<tr>
<td>PHT 6609 Critical Assessment of the Literature/EBP</td>
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<tr>
<td>PHT 7264 Neuromuscular Clinical Problem Solving</td>
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<tr>
<td>PHT 7265 Cardiopulmonary &amp; Integumentary Clinical Problem Solving (year-long, concludes in Spring)</td>
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</tr>
<tr>
<td>PHT 7421 Professional Issues 1</td>
<td>2</td>
</tr>
<tr>
<td>PHT 7540A Principles of Patient/Client Management &amp; Seminar 1</td>
<td>1</td>
</tr>
<tr>
<td>PHT 7866 Integrated Clinical Experience 1</td>
<td>1</td>
</tr>
<tr>
<td>Spring 2 Contact hours @ 15 weeks = 22.7</td>
<td>20</td>
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</table>
### Physical Therapy (D.P.T.)

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHT 7265</td>
<td>Cardiopulmonary &amp; Integumentary Clinical Problem Solving (year-long, continued from Fall)</td>
<td>3</td>
</tr>
<tr>
<td>PHT 7328</td>
<td>Pediatric Physical Therapy</td>
<td>3</td>
</tr>
<tr>
<td>PHT 7402</td>
<td>Psychosocial Aspects of Physical Therapy Practice</td>
<td>3</td>
</tr>
<tr>
<td>PHT 7531</td>
<td>Professional Issues 2</td>
<td>3</td>
</tr>
<tr>
<td>PHT 7540B</td>
<td>Principles of Patient/Client Management &amp; Seminar 2</td>
<td>2</td>
</tr>
<tr>
<td>PHT 7777</td>
<td>Musculoskeletal Clinical Problem Solving</td>
<td>4</td>
</tr>
<tr>
<td>Summer 2</td>
<td>Contact hours @ 8 weeks = 40</td>
<td>20</td>
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<tr>
<td>PHT 6841</td>
<td>Clinical Education 1 (10 weeks @ 40 hours)</td>
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**Year 3 (43 weeks)**

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<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Fall 3</td>
<td>Contact hours @ 15 weeks = 26.5</td>
<td></td>
</tr>
<tr>
<td>PHT 7151</td>
<td>Health Promotion and Wellness</td>
<td>2</td>
</tr>
<tr>
<td>PHT XXXX</td>
<td>Seminar: Contemporary Issues in Physical Therapy</td>
<td>3</td>
</tr>
<tr>
<td>PHT 8179</td>
<td>Movement Science 3</td>
<td>3</td>
</tr>
<tr>
<td>PHT 8266</td>
<td>Advanced Clinical Problem Solving</td>
<td>5</td>
</tr>
<tr>
<td>PHT 8550</td>
<td>Professional Issues 3</td>
<td>3</td>
</tr>
<tr>
<td>PHT 8702</td>
<td>Prosthetics and Orthotics</td>
<td>3</td>
</tr>
<tr>
<td>*</td>
<td>Optional Elective</td>
<td>3</td>
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</tbody>
</table>

**Spring / Summer 3**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHT 7842</td>
<td>Clinical Education 2 (12 weeks @ 40 hours)</td>
<td>6</td>
</tr>
<tr>
<td>PHT 8843</td>
<td>Clinical Education 3 (16 weeks @ 40 hours)</td>
<td>8</td>
</tr>
</tbody>
</table>

Graduation in August of Year 3

122

**Comprehensive / Qualifying Exam information**

Licensure Examination following graduation and prior to initiating practice – the National Physical Therapy Examination (NPTE)
PHYSICAL THERAPY AND PUBLIC HEALTH PROGRAM

Dual Degree Program
Doctor of Physical Therapy (D.P.T.) and Master of Public Health (M.P.H.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
Rolling Admissions. One class admitted each August. Contact program for details.

Minimum Total Hours: Contact Programs
Program Level: Professional/Masters
Program Status: Active
CIP Codes: 51.2308/
Dept Code: PHT/
Program (Major/College): MPT MD

CONTACT INFORMATION

Colleges: Medicine and Public Health
Departments: School of Physical Therapy and Rehabilitation Sciences and Public Health
Contact Information: www.grad.usf.edu

PROGRAM INFORMATION

Physical therapists are health professionals with special expertise in the science of movement. They use this knowledge to provide preventive and therapeutic services and psychological support to people of all ages with movement dysfunction. Professional education includes study of basic sciences and the professional skills needed for client examination, evaluation, diagnosis, prognosis, intervention and outcomes. Students will participate in comprehensive clinical internships throughout the program. The School of Physical Therapy and Rehabilitation Sciences is a component of the Morsani College of Medicine and is a limited access first professional degree program with an annual enrollment of up to 36 students per year. Students complete the majority of their first year studies on a parallel path with the first year curriculum in medicine.

The Doctor of Physical Therapy is offered through the USF Medical School in the Morsani College of Medicine. For information regarding the DPT contact the School of Physical Therapy and Rehabilitation Sciences.

The Master of Public Health is offered through the USF College of Public Health. For information regarding the MPH contact the College of Public Health Graduate Studies office.

Accreditation:
Accredited by the Commission on Accreditation in Physical Therapy Education.

ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below. Contact programs for complete information.

Program Admission Requirements

- Have a bachelor’s degree or equivalent from a regionally accredited university, and completion of prerequisite courses.

- Have earned a "B" (3.00 on a 4.00 scale) average or better in all work attempted while registered as an upper division student working for a baccalaureate degree; overall GPA of 3.00 and on all prerequisite coursework.

- Interview upon request of the School of Physical Therapy and Rehabilitation Sciences.

- Have at least 20 total hours of documented, observational, volunteer or other work experience in both hospital outpatient and inpatient physical therapy settings.
• English competency. Applicants who have completed a degree in which English is not the primary language of instruction must present evidence of competency to pursue studies in the English language prior to being extended an offer of admission. Acceptable English language proficiency tests for applicants to the Doctor of Physical Therapy program are: TOEFL (Test of English as a Foreign Language) a minimum score of 600 (paper version); 230 (computer version).

• Have a written autobiographical statement of personal values and purpose for attending USF’s DPT Degree Program.

DEGREE PROGRAM REQUIREMENTS

Contact programs for complete information.

Students must complete 107 credit hours of professional coursework and meet the general graduate requirements of the School of Physical Therapy and Rehabilitation Sciences, the Morsani College of Medicine, and the College of Public Health for admission and graduation.

COURSES

See http://ugs.usf.edu/course-inventory
PHYSICIAN ASSISTANT STUDIES PROGRAM

Master of Physician Assistant Studies (M.P.A.S.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
Spring: April
(Contact Program for exact date)

Minimum Total Hours: 90
Program Level: Masters
CIP Code: 51.0912
Dept Code: MPA
Program (Major/College): MPA / MCOM
Approved: Effective Fall 2016

CONTACT INFORMATION

College: Morsani College of Medicine
Department: Physician Assistant Program
Contact information
www.health.usf.edu/medicine/pa/

PROGRAM INFORMATION

The goal of the USF PA Program is to prepare its graduates to deliver high-quality, evidence-based, patient-centered health care. This is accomplished through a robust, systems-based curriculum. The program (delivered over 24 continuous months) begins with a rigorous 12-month phase in basic and medical sciences. Educational methodologies include traditional lecture, clinical simulation, team-based problem solving, and hands-on laboratory learning experiences – often delivered with students from other USF health students. The 12-month clinical phase follows and students engage in approximately 2300 hours of supervised clinical practice experiences. Students will participate in the following five week, core clinical clerkships: Internal Medicine, Family Medicine, Pediatrics, Surgery, Emergency Medicine, Women’s Health, Behavioral and Mental Health, and two elective clerkships. Upon successful completion of the two-year curriculum, the student is awarded the Master of Physician Assistant Studies degree. The graduate is then eligible to sit for the Physician Assistant National Certifying Exam (PANCE) administered by the National Commission on Certification of Physician Assistants (NCCPA).

Accreditation

The ARC-PA has granted Accreditation - Provisional status to the USF Morsani College of Medicine Physician Assistant Program sponsored by the University of South Florida.

Accreditation-Provisional is an accreditation status granted when the plans and resource allocation, if fully implemented as planned, of a proposed program that has not yet enrolled students appear to demonstrate the program’s ability to meet the ARC-PA Standards or when a program holding Accreditation-Provisional status appears to demonstrate continued progress in complying with the Standards as it prepares for the graduation of the first class (cohort) of students. Accreditation-Provisional does not ensure any subsequent accreditation status. It is limited to no more than five years from matriculation of the first class.

Editorial note - accreditation information updated Oct 2016 to reflect the change in status.

Accredited by the Commission on Colleges of the Southern Association of College and Schools.
Admission Information

All applicants to the USF MCOM PA program must apply through the Central Application Service for Physician Assistants (CASPA).

Degree, GPA and GRE

- Baccalaureate Degree from a U.S. regionally accredited College or University. (Baccalaureate degrees must be completed by the Fall semester prior to matriculation.)
- Overall GPA of 3.0 and Science GPA of 3.0; Minimum Upper Division Grade Point Average of 3.0
- Graduate Record Examination (GRE) Test is required—official scores are required and must be from tests taken within the past five years. The Admissions Committee will evaluate your most recent set of GRE scores.
- Applicants MUST meet a minimum GRE score at or above the 50th percentile in all components of the examination to be considered eligible for an interview.
- GRE Scores are to be sent directly by ETS to CASPA code 8854.
- Degree and prerequisite coursework taken outside of the U.S. is not accepted (regardless if made equivalent by a U.S. institution).
- Transfer credit or Admission with Advanced Standing from another PA program is not accepted. All curriculum requirements for the program are required for graduation and must be completed at the USF PA program.

Prerequisites

- Mathematics – 6 Credit Hours
- Statistics – 3 Credit Hours
- Biology with Laboratory – 4 Credit Hours
- Microbiology with Laboratory – 4 Credit Hours
- Chemistry with Laboratory – 8 Credit Hours
- Organic Chemistry with Laboratory – 4 Credit Hours
- Biochemistry – 3 Credit Hours
- Anatomy & Physiology with Laboratory – 8 Credit Hours
- Medical Terminology – 3 Credit Hours
- English – 6 Credit Hours
- Humanities – 3 Credit Hours
- Social Sciences – 9 Credit Hours

Experience in Healthcare Setting

- A minimum of 500 hours of direct patient care experience in a health care setting must be completed prior to application. Examples of direct patient care experiences may include but not limited to: EMT, Paramedic, Medical Assistant, Nurse, Surgical Technician, Athletic Trainer, and Physical Therapy Aide.
- Shadowing experiences are not accepted as direct patient care.
- Applicants will submit verifiable information regarding their health care experiences on CASPA.

Letters of Recommendation

- Three letters of recommendation are required.
- Letters should be from Physicians, Physician Assistants, Nurse Practitioners, Research Mentors, Professors, Volunteer Coordinators/Supervisors who had direct interaction with the applicant and can attest to his/her qualities, strengthens and suitability for a career as a Physician Assistant.
  - One letter of a recommendation must be from someone who supervised the applicant in a clinical setting.
  - Letters should not be from a peer or family member.

Residency

- U.S. Citizen or Permanent Resident Alien
  - Permanent Resident Alien must possess a valid Green Card at the time of application. Documentation will be required.
- In State or Out of State for tuition purposes
To qualify for in state tuition, proof of residency for the 12 months preceding matriculation is required. For more information, please visit our General Classifications Procedures page.

Degree Program Requirements:
Total minimum hours required: (if doctoral, are these post-bacc or post-masters)

Curriculum for Year 1

Summer – 18 Credits
<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Anatomy I</td>
<td>2</td>
</tr>
<tr>
<td>Pathophysiological Basis of Disease I</td>
<td>3</td>
</tr>
<tr>
<td>Clinical Medicine I</td>
<td>5</td>
</tr>
<tr>
<td>Clinical Pharmacology I</td>
<td>3</td>
</tr>
<tr>
<td>Physical Diagnosis I</td>
<td>2</td>
</tr>
<tr>
<td>Role of the Physician Assistant in American Healthcare</td>
<td>1</td>
</tr>
<tr>
<td>Clinical Laboratory and Diagnostics I</td>
<td>2</td>
</tr>
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</table>

Fall – 18 Credits
<table>
<thead>
<tr>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Anatomy II</td>
<td>2</td>
</tr>
<tr>
<td>Pathophysiological Basis of Disease II</td>
<td>3</td>
</tr>
<tr>
<td>Clinical Medicine II</td>
<td>5</td>
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<tr>
<td>Clinical Pharmacology II</td>
<td>3</td>
</tr>
<tr>
<td>Physical Diagnosis II</td>
<td>2</td>
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<tr>
<td>Biostatistics and Epidemiology: An Introduction to Clinical Research</td>
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<tr>
<td>Clinical Laboratory and Diagnostics II</td>
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<tr>
<td>Basic Medical Genetics</td>
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Spring – 17 Credits
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<th>Course Name</th>
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<tbody>
<tr>
<td>Clinical Medicine III</td>
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<tr>
<td>Advanced Clinical Pharmacotherapeutics</td>
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<tr>
<td>Clinical Skills and Procedures</td>
<td>2</td>
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<td>Evidence-Based Medicine</td>
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<tr>
<td>Behavioral Medicine</td>
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<td>Cultural Issues in Healthcare</td>
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Curriculum for Year 2

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<tr>
<td>Internal Medicine</td>
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<tr>
<td>Surgery</td>
<td>5</td>
<td>4</td>
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<tr>
<td>Pediatrics</td>
<td>5</td>
<td>4</td>
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<tr>
<td>Family Medicine</td>
<td>5</td>
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<td>Women’s Health</td>
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<td>Emergency Medicine</td>
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<tr>
<td>Behavioral and Mental Health</td>
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<tr>
<td>Elective</td>
<td>10</td>
<td>8</td>
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Core Course Requirements
All courses above.

http://health.usf.edu/medicine/
Electives
Students chose clinical electives in year two of the program.

Comprehensive Exam
Capstone Research Project
The program culminates in a required capstone research project. The goal of the capstone research project is to develop competency in the critical appraisal of research and the application of the best evidence to patient care, health policy, and advocacy; ultimately resulting in improved patient outcomes.

Internship

Other
Upon graduation, the MPAS graduate will be eligible to sit for the Physician Assistant National Certifying Exam (PANCE) administered by the National Commission on Certification of Physician Assistants (NCCPA).
REHABILITATION SCIENCES PROGRAM

Doctor of Philosophy (Ph.D.) Degree

DEGREE INFORMATION

Program Admission Deadlines:
Domestic Students:
- Fall: June 1
- Spring: October 15
- Summer: No Admission

International Students living outside the U.S.
Deadline for immigration documents, etc.:
- Fall: January 1
- Spring: September 15
- Summer: No Admission

Minimum Total Hours: 66
Program Level: Doctoral
CIP Code: 51.2314
Dept Code: SPTRS
Program (Major/College): RHS/MD

Concentrations
Veteran’s Health/Reintegration (VHR)
Chronic Disease (CHD)
Neuromusculoskeletal Disability (NMD)

CONTACT INFORMATION

College: Medicine
Department: School of Physical Therapy and Rehabilitation Sciences
Contact Information:
www.grad.usf.edu
http://health.usf.edu/medicine/dpt/

PROGRAM INFORMATION

The Ph.D. in Rehabilitation Sciences degree program will prepare faculty researchers and leaders with content expertise in rehabilitation sciences who will contribute to the development of rehabilitation practice, research and education in an emerging 21st century health care environment. Graduates of the Ph.D. program in Rehabilitation Sciences are expected to demonstrate advanced knowledge and productivity relative to one area of concentration: Veteran’s Health/Reintegration, Chronic Disease, or Neuromusculoskeletal Disability. Students will complete a core set of rehabilitation sciences courses, statistics/research methodology courses and then select an area of content expertise where independent research will be conducted.

Accreditation:
Accredited by the Commission on Colleges of the Southern Association of College and Schools

Major Research Areas:
Rehabilitation Science, Veteran’s Health/Reintegration, Chronic Disease, Prosthetics, Neuromusculoskeletal Disability, Physical Therapy
ADMISSION INFORMATION

Must meet University requirements (see Graduate Admissions) as well as requirements listed below

Program Admission Requirements
- At least a Master’s degree or first-professional doctoral degree in a rehabilitation or rehabilitation sciences related discipline
- Minimum of 3.00 GPA or equivalent in prior graduate and/or professional degree studies
- GRE required, with preferred minimum scores of 70% V, Q, AW
- Interview to determine professional goals
- Three Letters of Recommendation
- Personal Statement – in 750 to 1000 words, state your professional plans and career objectives (Goal statement). Please include personal qualifications, qualities and professional development and how they have influenced your career path; reasons for this particular degree in relation to academic background, professional work experience, and career goals. Describe prior experiences and accomplishments in a rehabilitation or rehabilitation sciences related discipline.
- Curriculum Vitae
- The Test of English as a Foreign Language (TOEFL/IBT) with a score of 79 or higher or the International English Language Testing System (IELTS) with a score of 6.5 will be required for international students from countries where English is not the official language, at the discretion of the Admissions Committee.

DEGREE PROGRAM REQUIREMENTS

Total Minimum Hours: 66 credit hours (post-masters)

Core Requirements
- RSD 6111 Introduction to Rehabilitation Science 3
- RSD 6112 Advanced Rehabilitation Science 3
- RSD 7930 Research Pro-seminar in Rehabilitation Science 2
- RSD 7300 Rehabilitation Ethics 3
- RSD 7910 Mentored Research Apprenticeship 1 and 2 1-2
- RSD 6921 Colloquium in Rehabilitation Sciences 1 and 2 1-2

Statistics/Research Methods Core
- PHC 6051 Biostatistics II 3
- PHC 7936 Seminar in Health Care Outcomes Measurements 3

Students choose from the following for the remaining 9 hours:
- HSC 6054 Design & Analysis of Experiments for Health Researchers 3
- GMS 6102 Experimental Design & Analysis 3
- PHC 6020 Design and Conduct of Clinical Trials 3
- PHC 6060 Biostatistical Case Studies and Consulting 3
- PHC 7709 Case Studies in Quantitative Analysis of Public Health Data 3
- GMS 6840 Cultural and Diversity Issues in Clinical Research 2
- GMS 6843 Scientific Communication 2
- PHC 7054 Advanced Biostatistical Methods 3
- PHC 7053 Generalized Linear Models 3
- PSY 6217 Research Methods and Measurement 3
- SYA 6437 SPSS and Social Research 3
- PHT 6609 Critical Assessment of the Literature & Evidence-based Practice 3

Concentrations
Students select from the following Concentrations:

66 credit hours (post-masters)
Veteran’s Health/Reintegration (VHR)
Students in consultation with their committee will select courses for the Concentration.
Potential courses:
- RSD 7933 Special Topics in Veteran’s Health/Reintegration 3
- SOW 6126 Theoretical Perspectives on Physical Dysfunction 2
- PET 6388 Physical Activity Health and Disease 3
- PHT 7540 Principles in Patient/Client Management Seminar 3
- GMS 6771 Aging and Neuroscience 3
- MHS 6210 Wraparound Interventions and the System of Care 3
- PHC 6501 Homelessness: Implications for Behavioral Healthcare 3
- PHT 8702 Advanced Prosthetics and Orthotics 3

Chronic Disease (CHD)
Students in consultation with their committee will select courses for the Concentration.
Potential courses:
- RSD 7931 Special Topics in Chronic Disease 3
- GEY 7602 PhD Seminar in Health and Aging 3
- GEY 7604 Biomedical Aging 3
- GEY 7610 Psychological Issues in Aging: Interdisciplinary Perspective 3
- GEY 7622 PhD Seminar in Policy and the Elderly 3
- GEY 7623 Social and Health Issues in Aging 3
- GEY 7649 Population Aging 3
- GMS 6334 Pathobiology of Human Cancer 3
- SOW 6126 Theoretical Perspectives on Physical Dysfunction 3
- PHC 6410 Social and Behavioral Sciences Applied to Health 3
- PHC 6522 Nutrition in Health and Disease 3
- PHC 6418 Public Health and Aging 3
- RCS 5035 Rehabilitation Counseling: Concept and Applications 3
- RCS 5080 Medical Aspects of Disability 3

Neuromusculoskeletal Disability (NMD)
Students in consultation with their committee will select courses for the Concentration.
Potential Courses:
- RSD 7932 Special Topics in Neuromusculoskeletal Disability 3
- GMS 6440 Basic Medical Physiology 3
- GMS 6431 Cell Physiology 4
- GMS 6770 A Metabolic Approach to Pain Management 3
- HSC 6556 Pathobiology of Human Disease I 3
- HSC 6557 Pathobiology of Human Disease II 3
- PET 6388 Physical Activity Health and Disease 3
- PET 6084 Body Composition: Assessment and Management 3
- PET 6098 Topics in Strength and Conditioning 3
- PET 6339 Neuromuscular Aspects of Exercise Physiology 3
- PET 6351 Occupational Medicine for Health Professionals 3
- PHT 7450 Principles in Patient/Client Management Seminar 3
- PHT 7264 Neuromuscular Clinical Problem Solving 3
- PHT 7777 Musculoskeletal Clinical Problem Solving 3
- PHT 8724 Anatomical Basis of Physical Therapy and Rehabilitation 3
Electives

Electives may be selected in consultation with student's committee.

Potential Courses:
- GMS 6020 Neuroscience 5-6
- GMS 6541 Pharmacology for Health Professionals 4
- GMS 6706 Basic Medical Neuroscience 3
- GMS 6843 Scientific Communication 2
- GMS 6875 Ethical and Regulatory Aspects of Clinical Research 3
- GMS 6890 Medicine and the Arts 3
- GMS 6891 Medicine and the Movies 3
- GMS 6840 Cultural and Diversity Issues in Clinical Research 2
- PHT 7151 Health Promotions and Wellness 3
- RSD 7xxx Directed Readings in Rehabilitation Sciences 3
- RSD 7xxx Teaching Practicum in Rehabilitation Sciences 3

Doctoral Qualifying Exam

As soon as the substantial majority of the course work is completed, the student must pass a written qualifying examination covering the subject matter in the major and related fields. This examination may be supplemented by an oral examination.

Dissertation

RSD 7980 Dissertation 12

Other Information:

* A wide range of electives within the Rehabilitation Sciences program and from other departments on the USF and USF Health campuses are available to students. Student may select electives that complement their course work and provide knowledge and skills that they will find useful upon graduation.

** Once accepted into candidacy, a student may begin work on their dissertation.

***While some students may complete the PhD requirements in three years, others may require more time to complete all requirements. Fourth year credit hours and courses would be directed toward fulfilling requirement.

COURSES

http://ugs.usf.edu/course-inventory

http://health.usf.edu/medicine/